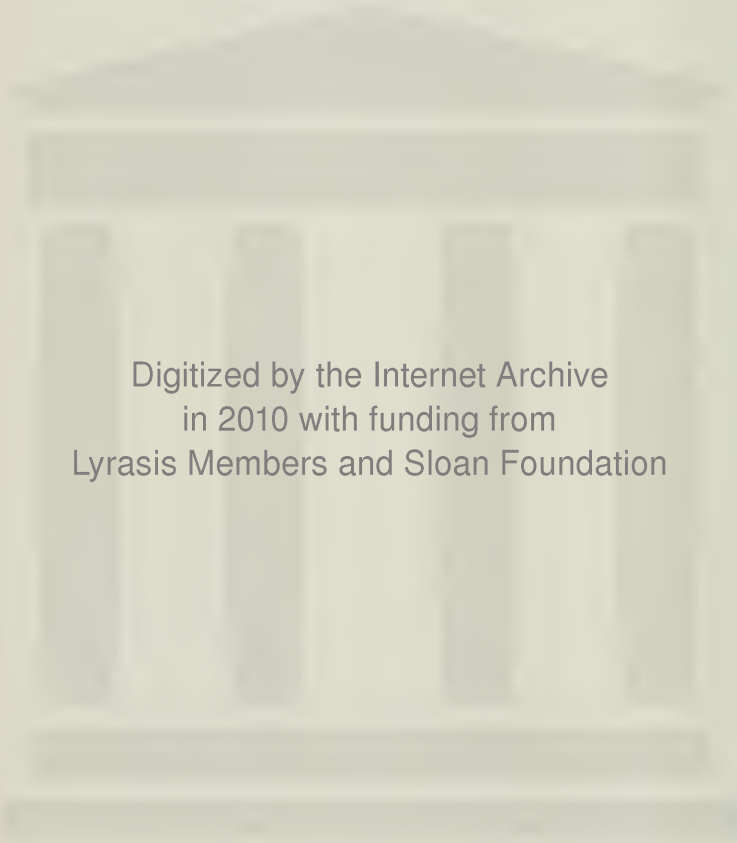






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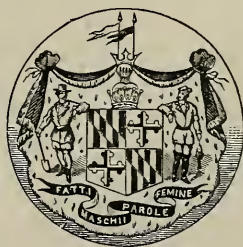
State Board of Health

—OF—

MARYLAND

—FOR THE—

YEAR ENDING DECEMBER 31, 1904.



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STATE BOARD OF HEALTH OF MARYLAND, 1904.

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CONTENTS.

	Page.
List of Officers and Employees.....	iii
Letter of Transmittal.	vii-xii
Vital Statistics	1-51
Reports of County Boards of Health.....	52-78
Reports of Town Boards of Health.....	79-86
Reports of Sanitary Inspections.....	87-132
Statistical Analysis of Typhoid Fever.....	132-145
Report of State Bacteriologist.....	147-154
Report of Inspector.....	155-164
Report of Clerk.....	165
Report of Chemist.....	166

LETTER OF TRANSMITTAL.

OFFICES OF THE STATE BOARD OF HEALTH.

Baltimore, December 20, 1905.

TO HIS EXCELLENCY

EDWIN WARFIELD,

GOVERNOR OF MARYLAND.

SIR: The health of the State during the past two years has been threatened by no unusual epidemic. *Smallpox*, which has given us a good deal of concern during the past eight years almost disappeared. For a period of eighteen consecutive months our chief city was wholly exempt. But four cases occurred in Maryland in 1905 down to December 10th, when a few cases appeared in Baltimore and its environs, and the year ends with a renewed menace, arising in the State of Virginia; not serious enough, however, to justify any alarm.

During the year 1905, *Typhoid Fever* has been unusually prevalent. The mortality for this year will exceed that for 1904, when 508 deaths were charged to typhoid fever. The increased prevalence in 1905, included several institutional outbreaks. The typhoid history of 1905 has strongly stimulated public interest in the supervision of water supplies, and has emphasized need of better control of the production and distribution of milk.

Tuberculosis killed 2,635 persons in Maryland in 1904, and a like number in 1905. The State has already provided satisfactory legislation for restricting the spread of this disease. With co-operation among local boards of health, the State Board of Health, and the charitable and philanthropic agencies, we can look for measurable profits in the control of this disease in the next ten years, and after that the gains should be larger. The two Acts of 1904 (Chapters 399 and 412) went into actual operation on May 1, 1905. More than 2,000 cases of tuberculosis are now registered, and the great majority of these have received the prophylactic supplies and the home instruction designed to prevent the communication of the disease to friends and attendants. Physicians and nurses serve as agents in this

work. In the counties where local sanitary government is weak in all respects, this work is not going forward satisfactorily, but in general it can be said that the tuberculosis problem has been seriously attacked by the people of the State, and that good results will follow.

The plan of operation in Maryland is somewhat novel, and while one must not speak too confidently after such brief experience, there is good reason to believe that the Maryland plan will succeed. It is absolutely safe to say that Maryland has already registered more cases of tuberculosis than were ever before registered in a like population in an equal time, and that the authorities have established helpful relations with a much greater number of consumptives, at much less cost, in Maryland than in any other State anywhere. The Tuberculosis Commission is to be congratulated on having devised a plan for restricting tuberculosis by simple and inexpensive operations in the homes of the people. A direct attack at the root of the evil in the household has not before been attempted on a large scale, and the Maryland procedure has not only encouraged its sponsors, but has also excited general interest among special students of the subject. The cost of the work so far done has kept within the appropriations, but the appropriations do not provide for certain expenditures which, if not absolutely necessary, would be highly advantageous. It is more and more evident, as experience grows, that comparatively few of the consumptives in Maryland are under medical treatment at any one time, that not more than half of them seek medical advice in the course of a year, that among the poor very few indeed of the advanced consumptives are under medical care except for a day or two at a time, and at rather long intervals. Through changes of address these patients are often lost sight of, and as changes of address are not reported, disinfections are not done and new tenants move into dangerous quarters. Much information of this sort has come to us through the special tuberculosis nurse of the Instructive Visiting Nurses' Association of Baltimore. The localities can use visiting nurses to great advantage in this work, and the State should provide similar means of supervising the use of materials expended by the State on this class of cases.

The *House Disinfection* required to be done by the local boards of health after death or removal of consumptives is most important. In those parts of the State where the sanitary

administration is good, disinfections are well done. The local sense of responsibility is not everywhere equally well developed, but on the whole, considering the short time since the law became operative, the local authorities have done as well as was expected.

VITAL STATISTICS.

There were registered in Maryland in 1904 deaths to the number of 20,350. Of these 10,818 occurred in Baltimore, 9,532 in other parts of the State. The death rate for Maryland in 1904 was 16.35 per 1,000 of population. Few if any American States have brought their mortality registration up to a satisfactory degree of efficiency in five years. *Maryland would probably be admitted at this time to the class of "Registration States," according to the United States census standards. That is to say, Maryland's mortality returns lack no more than ten per cent. of completeness. But I beg Your Excellency to consider that this is the very root and foundation of our sanitary institutions, and that anything short of numerical completeness is not to be tolerated in our statement of losses by death.* No argument is needed on this point; it is the business of the State to discover where this ten per cent. shortage occurs and to compel its detailed statement. I have to say, sir, that nearly all of this shortage occurs in four of the twenty-three counties, that it is in effect a concealment of information in which the State has a material interest, and while this concealment is for the most part due to ignorance, it should be dealt with as if it were vicious. Nine-tenths of the people of Maryland now know the value of systematic registration of deaths, and should no longer wait upon the ten per cent. who consider such information to be of little or no utility. The motive in these localities is to save a petty part of a petty expense. It is possible for the authorities to comply formally with the law, without exercising any real supervision over current mortality, so that but a fraction of the true mortality may be recorded, while the authorities cannot be charged with a specific misfeasance.

The State Board of Health should be authorized to take charge of any local registration office, whose returns are manifestly short of the mortality actually occurring, and to operate the same at the cost of the locality until such time as the local authorities shall engage to perform the duties of the office in a satisfactory manner. The square deal to which a locality may be entitled, can be secured

by causing the State Board of Health to pay the expenses in case the recorded mortality under its management shall not exceed that recorded in an equal time by the local authorities.

The experience of Maryland in the *registration of births* is like that of other American States ; it is unsatisfactory. The total births recorded in the State in 1904 were 17,063. Of these 8,599 were registered in Baltimore, and in other parts of the State 8,464. The apparent deficit between births and deaths amounts to 3,287. The shortage in the birth records for the State cannot be less than 16.5 per cent., and may be safely assumed to be more than 20 per cent. Since we are considering here the value of a citizen of Maryland, and not of a child born elsewhere, we must deal with this proposition on its absolute merits. A score or more of privileges and immunities are conditioned on age attained, but the official record of births which should settle all such questions is too often not made in Maryland. It should be unnecessary, even if it were possible to secure complete registration of births by penalizing neglect of that privilege ; I say privilege, for it is as much a privilege as a duty. It is only necessary for the laws to emphasize the private interests to be conserved by such registration. The law has now been in operation in all Maryland for six years and in Baltimore city for thirty years. *More than half the children who will enter school in 1906 can show an official record of birth. Every child applying for admission to the public schools next year should be asked to show a copy of the certificate of birth. After suitable intervals the certificate of birth should be expressly recognized in the laws of child labor, on responsibility for crime, on marriage, on disposition of property, on the right to vote, on eligibility to office, on admission to police, militia, jury duty, and in all other laws which condition any privilege, duty or immunity of a citizen on age attained.*

There are in Maryland, outside of Baltimore, 41 *Local Boards of Health*. Of these 23 are *County* boards, and 18 are *Town and District* boards. There are 55 local health officers. Routine duties are generally well performed by these local officers, and those who are best in routine work also excel in emergency work. Prompt and intelligent action usually follows timely information, and many of the local officers have saved their communities heavy expense as well as serious distress on account of communicable diseases. Three or four local health

officers are, however, inclined to treat their positions as sinecures, and in one or two cases the appointing authorities desire the health office to be as nearly as possible functionless. The salaries paid are, as a rule, inadequate, but some of the worst paid men are remarkably efficient, while one at least of the well-paid local officers is very inefficient. The tenure of the office is too brief. While two years is over long to keep an incompetent man in office, it is not long enough to develop a good man. The tendency to reappoint men for a second and third term is growing, and one must admit that good progress has been made in local sanitary government during recent years.

The *laboratory for bacteriological examinations* has reached a high degree of usefulness. In 1904, a total of 3,752 bacteriological investigations were made, as follows :

For Typhoid Fever,	694
“ Malaria,	249
“ Tuberculosis,	442
“ Diphtheria,	1,056
“ Water Supplies,	159
“ Food Examinations,	5
“ Rabies,	2
“ Nose and Throat examinations in school outbreaks,	1,145

The work of 1905 will exceed these figures, the increase being in tuberculosis examinations, in water supplies, and in typhoid fever. All the correspondence of the laboratory is carried on by the laboratory men, who also send out a good deal of express matter. Over 7,000 pieces of first-class mail have been sent out from the laboratory in the past two years. There are three employees in the laboratory, and the total appropriations for salaries and expenses is \$2,500. The laboratory is open seven days in the week, and during the last four months it has been necessary to employ extra help from time to time. A deficit is feared in this year's work, though every effort is being made to prevent it.

In the *Executive Office*, in the 163 days from June 26th to December 6th, 7,053 pieces of first-class mail were sent out. Of these, 2,067 were letters, and the remainder were postal cards or partly printed letters. In the same period we have sent out from the Executive Office 350 third-class packages and

a considerable amount of express matter. Printed letters of warning, advice on matters of local or general importance, addressed to physicians or others most concerned, will this year exceed 6,000 in number. The outgoing mail for 1905 will therefore exceed 16,000 pieces. The growth of this business has been gradual, and is now embarrassing, especially in the matter of real letter writing. In 1903 the number of letters was 1,792, and in 1904 the number will exceed 4,000. We do our best to simplify correspondence by utilizing set forms, but the amount of work which cannot be treated in this way is now very large. Four persons are available for this office work, two medical men, a stenographer and a boy. The secretary and his assistant are much engaged in local investigation at a distance, and in consultation with the many visitors at the office, and must besides supervise the analysis and tabulation of 20,000 certificates of birth and death each year. The urgent work of each day so fully occupies all the available force that certain sorts of necessary work are considerably in arrears, though we have been obliged to employ an extra stenographer at intervals during the year, and continuously for the last two months of the year. We need an additional stenographer and another man.

Most respectfully submitted,

WM. H. WELCH,
President.

Vital Statistics 1904.

The U. S. Census requirements for Registration States, as announced in the Twelfth Census of the United States, Vol. III, Part 1, Pa. XXXVIII, are :

“ * * * only those areas * * * where the deaths obtained from registration sources constituted 90 or more per cent. of the total (registration plus additions from enumerators); and the additions from the enumerators' returns did not exceed 20 per cent. of the number reported by them.”

The returned mortality in Maryland probably now constitutes over 90% of the total deaths. The reported births probably fall under 80% of the actual births. Maryland statistics share in this respect, the deficiency existing in practically all American States in the registration of births.

Vital statistics is the most important of the statistical studies dealing with the resources of the State as it concerns the State's most valuable asset, namely, its human living capital.

All capital possessed by the State (with the exception of real property), having intrinsic value, is directly dependent upon the population.

The proper study of vital statistics comprises three main elements :

1. The birth rate.
2. The death rate.
3. The duration of life.

The efforts of the public health board are consequently directed towards : First, increasing the birth rate ; second, diminishing the death rate ; third, increasing the duration of life, the latter consideration being most important from the sanitarian's standpoint.

The total deaths registered in Maryland during 1904 were : for the rural districts 9,532; in Baltimore city 10,818; making a total for the State of 20,350.

The total births reported for the same year from the rural districts were 8,464; for Baltimore city, 8,599; making a total for the State of 17,063, leaving an apparent deficiency in the population of the State of 3,287.

The rates for births, deaths, increase or decrease in 1904, were all calculated from the estimated population for 1904; the actual figures of population being only available for the census years. All estimates are drawn from the last census year, 1900.

In the following method the population for the inter-census years is calculated by logarithms.

METHOD OF ESTIMATING POPULATION IN THE INTER-CENSUS YEARS.

To secure a more accurate estimate of population in the inter-census years than that recommended by the U. S. Census Bureau a *geometric* method of increase is used in place of the *arithmetic* method.

In the *arithmetic* method used by the Census Bureau the absolute increase for the ten years intervening between the two last censuses is divided by 10 and this number added to each succeeding year following after the last census.

In the *geometric* method the actual annual rate of increase is calculated for the ten years intervening between the two last censuses.

If p = population of the census preceding the last and

P = population of the last census we determine the rate of increase (n) by the following formula:

P = population at census 10 years previous to last.

$P(n+1)$ = population one year later.

$P(n+1)^2$ = population two years later.

$P(n+1)^3$ = population three years later, etc.

And $(n+1)^{10}$ = Rate of increase for the 10 years intervening between the last two censuses.

RATE OF INCREASE OF POPULATION OF MARYLAND.

For the ten years intervening between the last two census—1890-1900—the rate of increase was for:

Maryland 13.97% Population 1900 $P = p \times 1.1397$ (A)

Baltimore 17.15% " " $P = p \times 1.1715$ (B)

Rural Districts 11.70% " " $P = p \times 1.1170$ (C)

To determine the annual increment (n) and population of inter-census years. (Logarithmic method.)

Rural Districts.

$$(n+1)^{10} = 1.1170 \text{ (C)}$$

$$\log. (n+1)^{10} = \log. 1.1170 = 0.04805$$

$$10) 10.04805-10$$

$$1.004805-1$$

$$\begin{aligned}\log. \quad (n + 1) &= 0.004805 \\ (n + 1) &= 1.0112\end{aligned}$$

$$\text{Pop. 1904} = (n + 1)^4 = 0.004805$$

4

$$\begin{aligned}\log. \quad (n + 1)^4 &= 0.01922 \\ (n + 1)^4 &= 1.0455\end{aligned}$$

$$\text{Pop. 1904} = \text{P. 1.0455}$$

Baltimore.

$$(n + 1)^{10} = 1.1715 \text{ (B)}$$

$$\begin{aligned}\log. \quad (n + 1)^{10} &= \log. \quad 1.1715 = 0.06874 \\ &10) \quad 10.06874-10 \\ &\quad \underline{1.006874-1}\end{aligned}$$

$$\begin{aligned}\log. \quad (n + 1) &= 0.006874 \\ (n + 1) &= 1.0160\end{aligned}$$

$$\text{Pop. 1904} = (n + 1)^4$$

$$\begin{aligned}\log. \quad (n + 1)^4 &= 0.006874 \\ &\quad \underline{4} \\ &\quad 0.027496\end{aligned}$$

$$(n + 1)^4 = 1.0654$$

$$\text{Pop. 1904} = \text{P. 1.0654}$$

Maryland.

$$(n + 1)^{10} = 1.1397 \text{ (A)}$$

$$\begin{aligned}\log. \quad (n + 1)^{10} &= \log. \quad 1.1397 = 0.05681 \\ &10) \quad 10.05681-10 \\ &\quad \underline{1.005681-1}\end{aligned}$$

$$\begin{aligned}\log. \quad (n + 1) &= 0.005681 \\ (n + 1) &= 1.0132\end{aligned}$$

$$\text{Pop. 1904} = (n + 1)^4$$

$$\begin{aligned}&0.005681 \\ &\quad \underline{4}\end{aligned}$$

$$\log. \quad (n + 1)^4 = 0.022724$$

$$(n + 1)^4 = 1.0537$$

$$\text{Pop. 1904} = \text{P. 1.0537}$$

BIRTHS IN MARYLAND.

The total number of births recorded in the State of Maryland during 1904 was 17,063, of which 8,464 were reported from the rural districts and 8,599 from Baltimore city.

The total number of white births reported was 14,842. The total number of colored births reported was 5,508.

The total number of male births was 10,700; of female births, 9,650.

In Table I the births, deaths and increase are given by counties for the whole population, white and colored races; also the birth rate, death rate, and rate of increase per 1,000 of the population (estimated as given above from the United States census figures for 1900.) This table also gives the estimated population of the counties (total white and colored) for 1904.

Several of the counties show a deficit in births over deaths. The highest deficit is in Baltimore county—6.78 per 1,000.

Anne Arundel, Caroline, Carroll, Cecil, Frederick, Garrett, Harford, Kent, Prince George's, Queen Anne's, St. Mary's, Talbot, Wicomico and Worcester counties, and Baltimore city, also show deficits.

The highest gain is in Dorchester county—9.03 per 1,000.

Table II gives the estimated urban and rural populations, male, female, white and colored, in Maryland during 1904.

TABLE I.
ESTIMATED POPULATION FOR 1904.

	White	Colored	Total
Allegheny	59,625	1,906	61,531
Anne Arundel.....	27,426	17,534	44,960
Baltimore	90,567	13,532	104,099
Calvert	5,863	5,861	11,724
Caroline.....	13,800	4,845	18,645
Carroll	36,325	2,442	38,767
Cecil	24,043	3,133	27,176
Charles.....	8,680	10,607	19,287
Dorchester	21,196	10,918	32,114
Frederick.....	51,837	7,068	58,905
Garrett.....	19,820	139	19,959
Harford	27,380	7,277	34,657
Howard	14,185	4,983	19,168
Kent	12,678	8,452	21,130
Montgomery.....	23,030	11,515	34,545
Prince George's.....	19,580	13,107	32,687
Queen Anne's.....	13,250	7,133	20,383
Somerset	18,327	10,762	29,089
St. Mary's.....	9,917	9,154	19,071
Talbot.....	14,380	8,445	22,826
Washington.....	48,681	3,105	51,786
Wicomico	19,395	6,814	26,209
Worcester	15,953	7,976	23,929
Total for 23 Counties.....	607,017	177,829	784,846
Baltimore City.....	502,350	88,612	590,747
Grand Total.....	1,109,142	266,441	1,375,593

TABLE I.—*Continued.*
 BIRTHS, DEATHS AND INCREASE OF POPULATION.

COUNTIES.	WHOLE POPULATION.			WHITE.			COLORED.		
	Births.	Deaths.	Increase or decrease.	Births.	Deaths.	Increase or decrease.	Births.	Deaths.	Increase or decrease.
Allegany	1,380	842	+538	1,326	787	+530	54	55	— 1
Anne Arundel	589	617	— 28	360	330	+30	229	287	— 58
Baltimore	906	1,603	— 697	808	1,373	— 565	98	230	— 132
Calvert	235	152	+83	127	64	+63	108	88	+20
Caroline	135	148	— 13	116	92	+24	19	56	— 37
Carroll	359	445	— 86	336	403	— 67	23	42	— 19
Cecil	352	372	— 20	294	283	+11	58	89	— 31
Charles	392	250	+142	174	88	+86	218	162	+56
Dorchester	601	310	+291	448	170	+278	153	140	+13
Frederick	577	675	— 98	530	540	— 10	47	135	— 88
Garrett	159	173	— 14	157	169	— 12	2	4	— 2
Harford	148	358	— 210	123	261	— 138	25	97	— 72
Howard	243	239	+4	185	155	+30	58	84	— 26
Kent	213	312	— 99	134	142	— 7	79	171	— 92
Montgomery	479	341	+138	349	195	+154	130	146	— 16
Prince George's	405	489	— 84	247	242	+5	158	247	— 89
Queen Anne's	186	288	— 102	160	146	+14	26	142	— 116
Somerset	328	397	+21	243	175	+68	85	132	— 47
St. Mary's	129	156	— 27	91	79	+12	38	77	— 39
Talbot	222	276	— 54	168	144	+24	54	132	— 78
Washington	679	678	+1	650	611	+39	29	67	— 38
Wicomico	172	209	— 37	167	143	+24	5	66	— 61
Worcester	226	292	— 66	142	155	— 13	84	137	— 53
Baltimore City	8,599	10,818	—2219	6,863	8,096	—1,233	1,736	2,722	— 986

TABLE I—*Continued.*

BIRTH RATES, DEATH RATES, AND RATE OF INCREASE, 1904.

COUNTIES.	WHOLE POPULATION.			WHITE.			COLORED.		
	Births per 1000.	Deaths per 1000.	Increase or decrease per 1000.	Births per 1000.	Deaths per 1000.	Increase or decrease per 1000.	Births per 1000.	Deaths per 1000.	Increase or decrease per 1000.
Allegany.....	22.42	13.68	+8.74	22.23	13.19	+9.04	28.33	28.85	—0.50
Anne Arundel.....	13.09	13.72	—0.63	13.12	12.03	+1.09	13.06	16.36	—3.30
Baltimore.....	8.62	15.40	—6.78	8.92	15.16	—6.24	7.24	16.99	—9.75
Calvert.....	20.04	12.96	+7.08	21.66	19.91	+10.75	18.42	15.18	+3.24
Caroline.....	7.24	7.93	—0.69	8.40	6.66	+1.74	3.92	11.55	—7.63
Carroll.....	9.26	11.47	—2.21	9.24	11.09	—1.85	9.41	17.19	—7.78
Cecil.....	12.95	13.68	—0.73	13.22	11.76	+0.46	15.36	28.40	—13.04
Charles.....	20.32	12.96	+7.36	20.04	10.13	+9.91	20.55	15.27	+5.28
Dorchester.....	18.71	9.68	+9.03	21.12	8.02	+13.11	14.01	12.82	+1.19
Frederick.....	9.79	11.45	—1.66	10.22	10.41	—0.19	6.64	19.10	—12.46
Garrett.....	7.96	8.76	—1.20	7.92	8.52	—0.60	14.38	28.76	—14.38
Harford.....	4.27	10.32	—6.05	4.49	9.56	—5.07	3.43	13.32	—9.89
Howard.....	12.67	12.46	+0.21	13.04	10.92	+2.12	11.64	16.85	—5.21
Kent.....	10.08	14.76	—4.68	10.57	11.12	—0.55	9.34	20.23	—10.89
Montgomery.....	13.86	9.87	+3.99	15.15	8.46	+6.69	11.28	12.67	—1.39
Prince George's.....	12.37	14.96	—2.59	12.61	12.35	+0.26	12.05	18.84	—6.99
Queen Anne's.....	9.12	14.12	—5.00	12.07	11.01	+1.06	3.64	19.90	—16.26
Somerset.....	11.27	10.55	+0.72	13.25	9.27	+3.98	7.89	23.26	—4.37
St. Mary's.....	6.76	8.17	—1.41	9.07	7.95	+1.12	4.15	8.41	—4.26
Talbot.....	9.72	12.09	—2.37	11.68	10.01	+1.67	6.39	15.63	—9.24
Washington....	13.11	13.10	+0.01	19.35	12.53	+0.82	9.66	21.57	—11.91
Wicomico.....	6.56	7.97	—1.41	8.61	7.37	+1.24	0.73	9.68	—8.95
Worcester.....	9.44	12.20	—2.76	8.89	9.40	—0.51	10.53	17.17	—6.64
Baltimore City.	14.55	18.15	—3.60	17.65	16.12	+1.53	19.59	30.72	—11.13

TABLE II.
ESTIMATED POPULATION OF MARYLAND, 1904.

Total population.....	1,244,595		
White.....	997,759	Males.....	617,322
Colored.....	246,253	Females.....	627,270
Baltimore city.			
Total.....	533,183		
White.....	449,649		
Colored.....	83,544		
Rural districts.			
Total.....	711,411		
White.....	548,110		
Colored.....	162,718		
Maryland.		White.	Colored.
Males.....	495,639		121,685
Females.....	502,120		125,150
Baltimore city.		White.	Colored.
Males.....	217,636		37,224
Females.....	232,013		46,310
Rural districts.		White.	Colored.
Males.....	278,004		84,461
Females.....	270,107		78,840

Formula for 1904: $P(n+1)^4 = 1.0476 P$.

P = Pop. U. S. Census 1900.

Table III gives a summary of the births, birth rates, deaths, death rates and excess of births over deaths per 1,000, among males, females, white and colored, for the rural districts, Baltimore and the State of Maryland.

It will be noticed in this table that both the birth and death rates are higher in the colored race. The death rate is proportionately so much higher, that the apparent rate of increase is much less in the colored race than in the white.

It will be seen in that part of the table headed "Excess of Births over Deaths," that there is an apparent increase only in one portion of the classes of population considered, viz., the white population in the rural districts.

The colored population of Baltimore city shows the highest birth rate, death rate, and the greatest excess of deaths over births.

The deficiencies in births are undoubtedly due to incomplete and defective returns of births, as there is an evident natural increase in both the white and colored populations of Maryland, as shown by the United States census tables.

All birth returns may be assumed to be defective in which the total births do not exceed the total deaths, excepting under unusual circumstances.

The best method of computing the natural increase of population in any State, exclusive of the increase due to immigration, is the comparison of that portion of the population born in a State and living in its borders during a census year, with the same class of population in the succeeding census year.

The variable factor in such a calculation will be the variation of interstate migration, but this factor will probably be very slightly variable in Maryland.

In the census year 1890 there were 762,641 persons resident in Maryland who were born in the State.

In the census year 1900 there were 956,661 persons resident in Maryland who were born in the State. The increase in the number of native born in Maryland during the years 1890-1900, was therefore 193,976, or an increase for the ten years of a little over 25%, which probably represents fairly closely in Maryland the natural decennial increase, independent of immigration.

TABLE III.

BIRTHS IN MARYLAND (1904) SUMMARY.

Births.	Males.	Females.	White.	Colored.	Total.
Rural Districts.....	4,393	3,972	7,335	1,750	8,365
Baltimore City.....	4,444	4,155	6,863	1,736	8,599
Maryland.....	8,837	8,127	14,198	3,486	16,964
Birth Rate.					
Rural Districts.....			13.38	10.76	12.30
Baltimore City.....			15.26	20.78	16.13
Maryland.....			14.23	14.16	13.64
Deaths.					
Rural Districts.....	5,046	4,486	6,746	2,786	9,532
Baltimore City.....	5,654	5,164	8,096	2,722	10,818
Maryland.....	10,700	9,650	14,842	5,508	20,350
Death Rate.					
Rural Districts.....			12.31	17.12	13.40
Baltimore City.....			18.00	32.58	20.29
Maryland.....			14.88	22.38	16.35
Excess of Births over Deaths per 1,000.					
Rural Districts.....			+ 1.07	— 6.36	— 1.10
Baltimore City.....			— 2.74	—11.80	— 4.16
Maryland.....			— 0.65	— 8.22	— 2.17

The succeeding tables (tables IV and V) give births and still births for the rural districts of Maryland.

From these districts there were registered in 1904, 8,927 births, of which 8,464 were living births and 463 still births; a proportion of 5.19% of all births still-born.

In table IV the male and female births are given by months, with the corresponding months of conception, dating nine months previously.

The greatest number of living births was recorded in September, 818, the corresponding period of conception being the month of December. The highest figures were for the months of July, August, September and October, (corresponding to the months of October, November, December and January.)

These figures are indicated graphically in the chart (Chart 1.)

The greatest number of male births occurred in September, the greatest number of female births occurred in January. In the months of January and July the female births were in excess of the male.

Table V (still-births), shows practically no seasonal variation, the only variation noted being proportional to the total number of births.

TABLE IV.

BIRTHS, MALE AND FEMALE, BY MONTHS.—* RURAL DISTRICTS.

Month of birth.	Corresponding period of conception.	Male.	Female.	Total.
January	April	338	400	738
February	May	350	346	696
March	June	412	307	719
April	July	355	323	678
May	August	338	225	563
June	September	327	311	638
July	October	375	378	753
August	November	395	359	754
September	December	432	386	818
October	January	395	348	743
November	February	344	316	660
December	March	332	273	605
		4,393	3,972	8,365

* Does not include births of unknown or unspecified sex.

TABLE V—RURAL DISTRICTS.

STILL BIRTHS BY MONTHS, 1904.

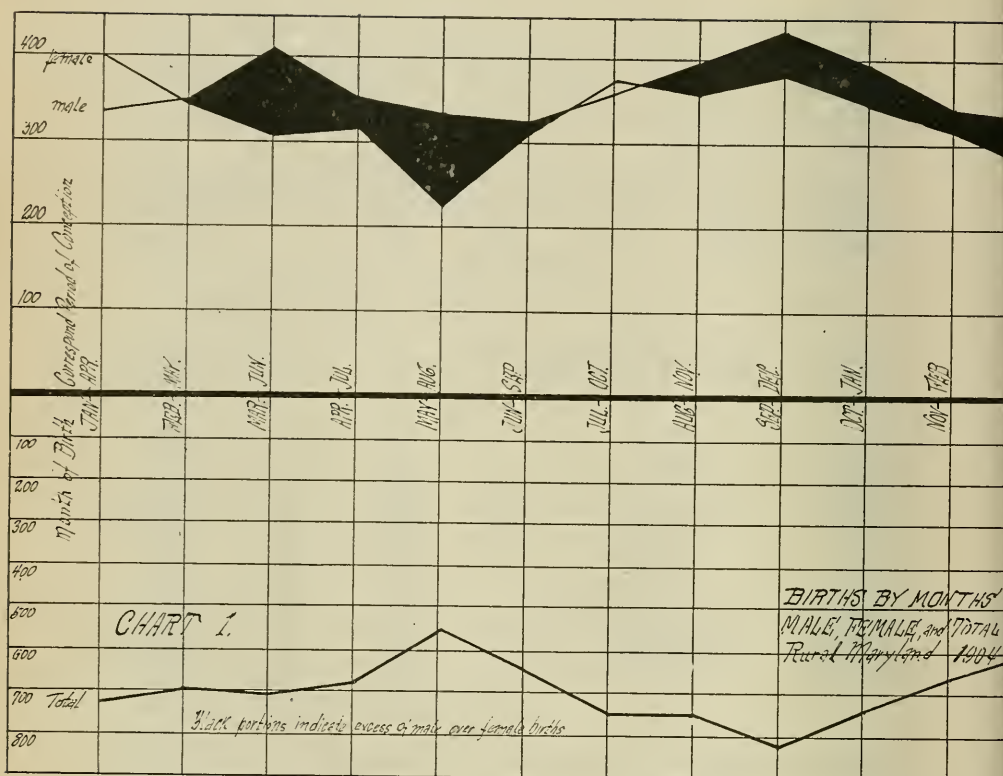
Month of Birth:	
January	35
February	35
March	40
April	33
May	35
June	42
July	49
August	46
September	35
October	45
November	30
December	38

463

Total births, all classes..... 8,927

Still births..... 463

Percentage of all births, 5.10%.



DEATHS IN MARYLAND.

The total number of deaths recorded in Maryland during 1904 was 20,350, of these 9,352 occurred in the rural districts and 10,818 in Baltimore city.

The total number of white deaths was 14,842, of colored deaths 5,508.

The total number of male deaths was 10,700, of female deaths 9,650.

Table I gives the births, deaths and increase, and the birth rates, death rates and rate of increase (per 1000) for the white and colored population of Maryland, estimated as shown on pages 2, 3 and 4.

Table III gives the births, birth rates, deaths, death rates and excess of births over deaths per 1000 of population, for

the male, female, white and colored, and total populations of the rural districts, Baltimore city, and the State of Maryland.

The death rates for the male and female population are not given in this table and are here stated.

Death Rates by Sex.

Rural districts—	
Male	13.92
Female.....	12.86
Baltimore city—	
Male	22.19
Female.....	18.60
Maryland—	
Male.....	17.33
Female.....	15.38

It would probably be advantageous to state the male and female death rates separately for the white and colored races, but the conditions shown in these figures would not be materially changed, viz., the superior vitality and longevity of the females of both races.

This table shows in common with the other tables giving death rates for the urban and rural districts, the adverse influence of city life.

Table III indicates another point in connection with city life, viz., that urban conditions fall with especial severity on the colored race.

TABLE VI.

DEATHS FOR THE YEAR 1904 BY AGES, SHOWING PERCENTAGES OF THE
TOTAL MORTALITY FALLING IN THE SEVERAL PERIODS
OF LIFE IN THE RURAL DISTRICTS, BALTIMORE
CITY AND THE STATE OF MARYLAND.

Ages.	Rural Districts.		Baltimore City.		Maryland.	
	Deaths.	Per Cent.	Deaths.	Per Cent.	Deaths.	Per Cent.
0-2	1981	20.78	2737	25.30	4781	23.18
0-5	2741	28.76	3155	29.17	5896	28.98
5-10	268	2.81	257	2.38	525	2.58
10-15	207	2.17	149	1.38	356	1.71
15-20	335	3.51	339	3.13	694	3.41
20-25	416	4.36	987	9.12	1753	8.61
25-30	350	3.67	.....	.....	.....	.....
30-35	355	3.72	986	9.11	1656	8.14
35-40	315	3.30	.....	.....	.....	.....
40-45	301	3.15	1090	10.08	1679	8.25
45-50	288	3.02	.....	.....	.....	.....
50-55	368	3.86	1119	10.34	1899	9.33
55-60	412	4.32	.....	.....	.....	.....
60-65	537	5.63	1203	11.12	2309	11.35
65-70	569	5.97	.....	.....	.....	.....
70-75	620	6.50	1034	9.56	2246	11.04
75-80	592	6.21	.....	.....	.....	.....
80 & over.	752	7.88	497	4.59	1249	6.14
Total.	9,532		10,818		20,350	

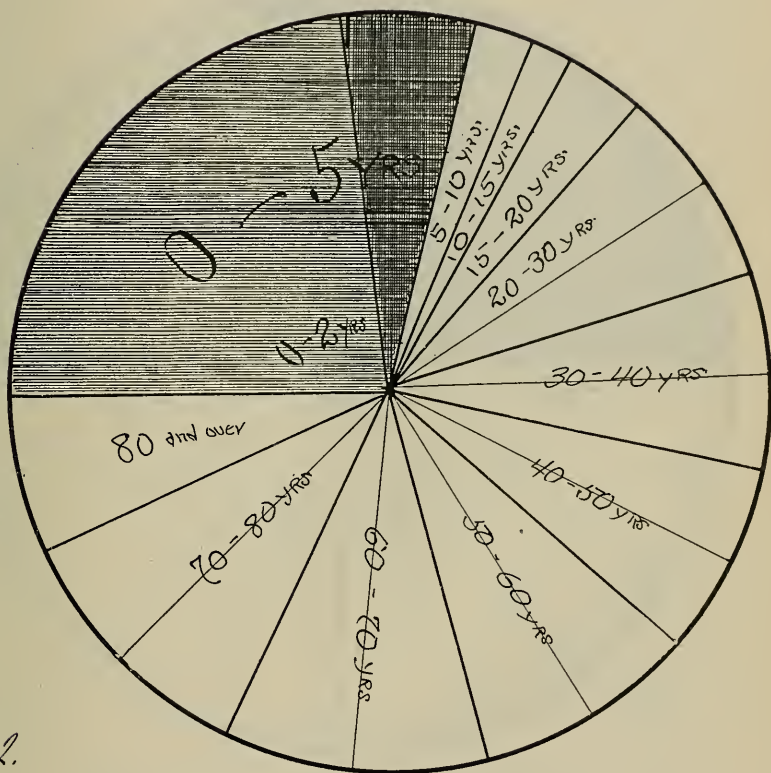
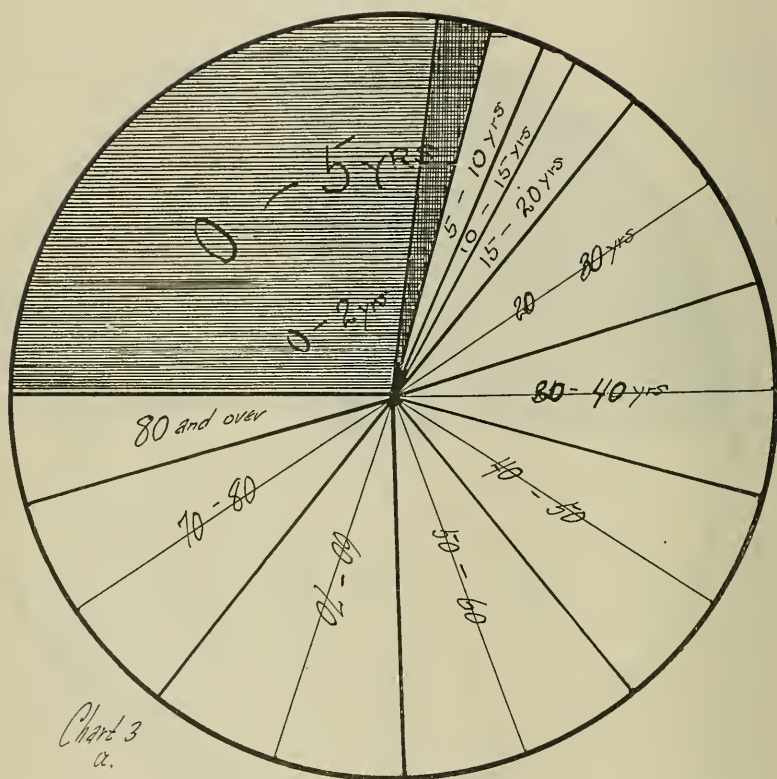


Chart 2.

State of Maryland Deaths by Ages 1904



Baltimore City Deaths by Ages 1904

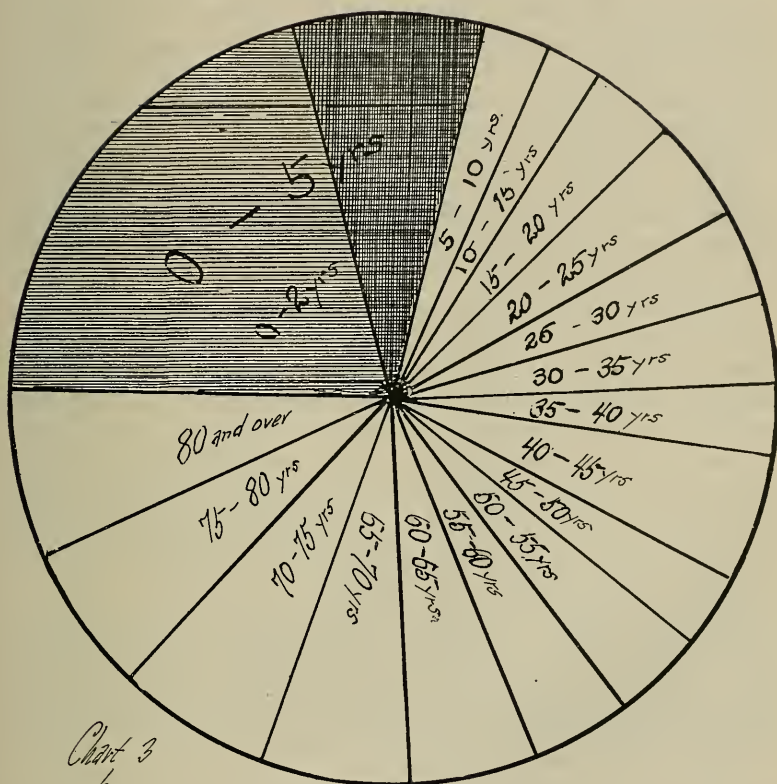


Chart 3
6

Rural Maryland Deaths by Ages 1904

Table VI gives the distribution of the deaths in the rural districts, Baltimore city and the State of Maryland, according to age, giving the number of deaths at each age period and the percentages of the total mortality. Chart 2 and Chart 3 show graphically the percentage of deaths at the several age periods.

The charts indicate the excessive number of deaths in infancy (under 2 and under 5 years) and the large number of adult deaths at about the age of seventy. The observation of the psalmist fixing the span of human life at three score and ten years is in a sense correct at the present day, inasmuch as a larger number of adults die at this age than at any other age period. The table and the accompanying charts show the higher infant mortality in Baltimore city as compared with the rural districts, and the much greater proportion of deaths above the age of eighty in the rural districts.

The infant mortality in the rural districts is lower than the urban. The deaths under 5 years in the rural districts comprise 28.76% of the total mortality; in Baltimore city the infant mortality is 29.17%. About three-quarters of the infant mortality occurs in the first two years of life.

This table does not show the actual mortality at the various age periods, as to determine this, the number of persons living at the age period must be given. Table VII gives the estimated population and percentage living at each age period, and the deaths and mortality for each period.

The infant death rate shown in this table for the State of Maryland is 41.81 per 1,000. After 5 years of age the mortality falls to 3.75 per 1,000 at the next quinquennial period. The mortality rises slowly thereafter until it rises above the infant mortality after the age of 70 years. The mortality after the age of 80 is 146.89 per 1,000.

The lowest death rate is in the period between 10 and 15 years. The death rate per 10,000 at this age period for the past three years (1902, 1903, and 1904), was respectively 28, 27 and 26.

TABLE VII.

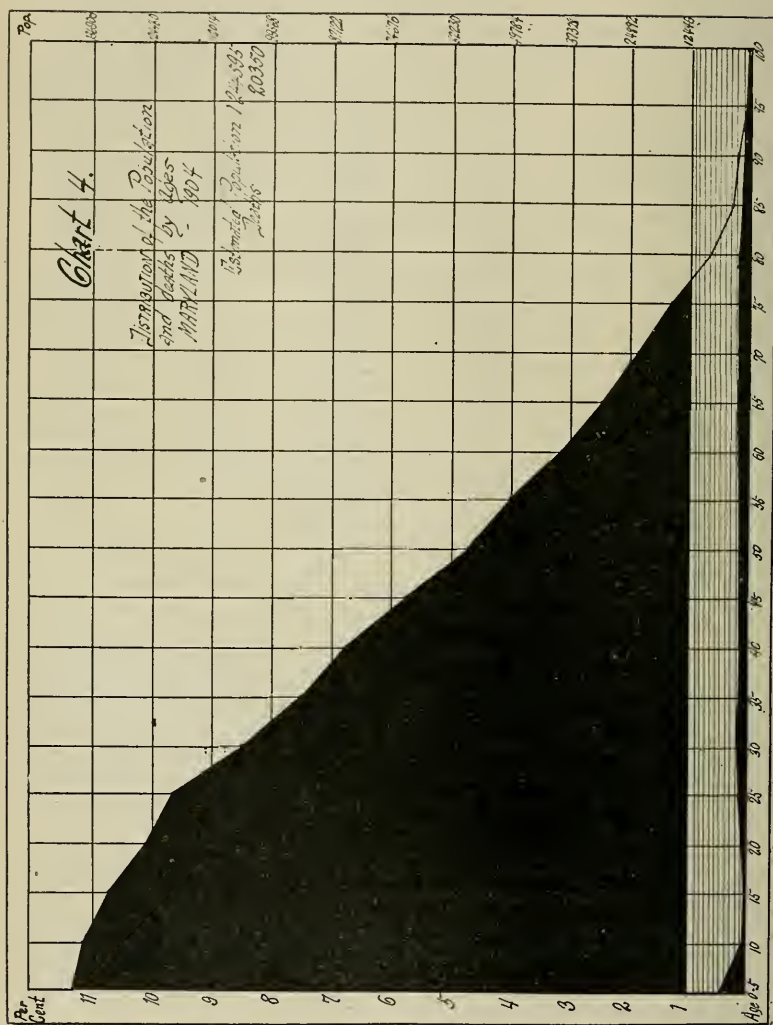
POPULATION AND DEATHS PER THOUSAND AT THE SEVERAL AGE-PERIODS—
MARYLAND, 1904.*Maryland's Estimated Population (1904) 1,244,595.*

Ages.	Per cent.	Estimated population.	Deaths.	Mort. per 1,000 of those living at the age.
Under 5 years	11.33	141,013	5,896	41.81
5 to 10 "	11.25	140,017	525	3.75
10 to 15 "	10.75	133,792	356	2.66
15 to 20 "	10.10	125,705	694	5.52
20 to 25 "	9.66	120,230	1,753	7.76
25 to 30 "	8.50	105,790		
30 to 35 "	7.50	93,365	1,656	9.38
35 to 40 "	6.66	82,973		
40 to 45 "	5.75	71,564	1,679	12.96
45 to 50 "	4.66	57,998		
50 to 55 "	4.00	49,784	1,899	21.49
55 to 60 "	3.10	38,582		
60 to 65 "	2.50	31,115	2,309	43.15
65 to 70 "	1.80	22,404		
70 to 75 "	1.33	16,554	2,246	90.38
75 to 80 "	.66	8,297		
80 to 85 "	.33	4,148	.....	.....
85 to 90 "	.20	2,489		
90 to 95 "	.10	1,245	1,249	146.89
95 to 100 "	.05	622		

The percentages are from the U. S. Census figures for 1900.

The figures of this table are graphically shown in Chart 4. The profile of the black area including the ruled portion below, indicates the population; the number of deaths is shown in the black area described within the ruled lines below. The population and deaths are shown for quinquennial periods up to the twentieth year; the deaths are shown thereafter in decennial periods.

It will be noted that after the twentieth year the absolute number of deaths remains somewhat the same, but the classes of the population from which they are drawn become progressively smaller, hence the mortality in the several age-periods becomes progressively greater, increasing in a high geometric ratio in the later period of life.



It is evident from the sanitary point of view, that important differences exist in the nature of these diseases in their relations to the public health, both as regards their infectiousness and the possibility of their prevention; accordingly the diseases have been classified in the table from a strictly sanitary standpoint.

The following main divisions have been recognized—constitutional diseases, congenital diseases and malformations, poisonings and intoxications, malignant neoplasms, degenerations, pregnancy and violence; other obscure and inaccurately classified affections not properly falling in one of the previous classes.

The most important of these classes is that including parasitic diseases, which are mostly communicable, and are to a large extent within the power of sanitary control. All diseases of parasitic origin may be assumed to be communicable to a certain degree, although important differences exist as to the amount and extent of their contagiousness. Accordingly, these diseases are considered in three classes: (a) Infectious and contagious diseases; (b) communicable diseases; (c) other infections of parasitic origin.

The diseases classified under each heading are shown in the table (Table VIII). Parasitic diseases form a class largely under the control of sanitary authorities. Poisonings and intoxications are to some extent controlled by law. Constitutional dyscrasias are not as a rule subject to administrative control, while congenital diseases and malformations are wholly beyond administrative influence. Deaths from violence are also usually outside the control of sanitary authorities. The diseases classified under degenerations and malignant neoplasms, form a class of maladies which are imperfectly understood, and are accordingly not capable of control by our present methods. The comparative importance of these classes as causes of death are graphically shown in Chart 5.

TABLE VIII.

A CLASSIFICATION OF CAUSES OF DEATH, WITH THE NUMBERS OCCURRING
AND THEIR RATIOS TO TOTAL MORTALITY. (MARYLAND, 1903.)

DISEASES.	Number.	Per Cent.
PARASITIC DISEASES.		
<i>*Infectious and Contagious Diseases.</i>		
Typhoid fever, scarlatina, whooping-cough, diphtheria, influenza, cerebro-spinal meningitis (epidemic), small pox, measles, glanders, anthrax, actinomycosis.....	1440	7.13
<i>*Communicable Diseases.</i>		
Malaria, dysentery, tuberculosis, syphilis, tetanus, pneumonia, gonorrhœa, rabies, Addisons' disease, erysipelas.....	4739	23.47
<i>†Other Infections.</i>		
Septicæmia and pyæmia, rheumatism (febrile), meningitis, bronchitis, broncho pneumonia, gastro-intestinal inflammations (summer diarrhœa of infants), tonsillitis, pharyngitis, cholecystitis (and other inflammations of the liver and gall-bladder), pericarditis, cystitis, peritonitis, acute nephritis, gangrene, abscess, furuncle, pleurisy, appendicitis, laryngitis, metritis, endometritis, endocarditis (acute).....	3969	19.66
<i>Constitutional Dyscrasias.</i>		
Diabetes, exophthalmic goitre, gout, anæmia, chlorosis, leukemia.....	195	.96
<i>Congenital Diseases and Malformations.</i>		
Morbus ceruleus, icterus neonatorum, marasmus scelerata.....	1072	5.31
<i>Poisonings and Intoxications.</i>		
Alcoholism, saturnism, and occupational intoxications scorbutus.....	76	.37
<i>Malignant Neoplasms.</i>		
Epithelioma, carcinoma, sarcoma.....	796	3.94
<i>‡Degenerations.</i>		
Cerebral congestion and hemorrhage, paralysis (without specified cause), diffuse meningo-encephalitis, cerebral softening (?), epilepsy, organic diseases of the heart, angina pectoris, arteriosclerosis, aneurysm (and allied arterial degeneration), asthma (in all forms), hepatic cirrhosis, Bright's disease, senile debility and dementia, locomotor ataxia, myelitis, insanity, dropsy.....	5221	25.87
<i>Pregnancy.</i>		
Puerperal hemorrhage, puerperal septicæmia, puerperal albuminuria and convulsions, phlegmasia alba dolens.....	208	1.03

TABLE VIII.—Continued.

DISEASES.	Number.	Per Cent.
<i>Violence.</i>		
Suicide, homicide, murder, duelling, accidental violence, poisoning, gas inhalation, drowning, strangulation and legal execution, death by insolation, lightning and freezing, burns and scalds.....	855	4.24
<i>Inaccurately Classified..</i>		
Encephalitis, hemorrhage, benign tumors, pulmonary congestion, apoplexy and gangrene, organic diseases of unspecified nature.....	1612	7.98
Total.....	20183	

*All communicable diseases have been assumed to be due to a living organism; and included in this list whether specific living cause has been discovered or not.

†The distinction between these three classes is one of kind rather than degree, as all parasitic diseases may at some time be communicable.

‡Includes mainly the disorders dependent on advanced years and prolonged strain.

PRINCIPAL CAUSES OF DEATH.

The principal causes of death are separately considered, as together they cause about seventy per cent. of the total mortality, and they are in the main preventable diseases.

In table IX the nineteen principal causes of death are tabulated, the table giving the number of deaths, the percentage of the total deaths, and the mortality per 10,000. Nineteen causes are given, instead of the fifteen considered on previous tables in preceding reports, in order to include diphtheria, which appears here at the foot of the table. Diphtheria is important mainly because of the conspicuous fall in its mortality during the past decade, due to improved sanitary conditions; the pre-eminent condition being the use of antitoxin for immunization and cure.

The comparative mortality from these diseases is shown graphically in charts 6 and 7. Tuberculosis (of the lungs) ranks first, causing 12.94% of the total mortality, or a mortality of 12.45 per 10,000. Pneumonia is second on the list, causing 7.58 per cent. of the total mortality. In the Maryland figures pneumonia ranks far below consumption as a cause of death, and there are no indications that pneumonia will in the future equal consumption in Maryland, at any rate during the present decade.

Deaths in the middle period of life have an importance from the economic standpoint far greater than those occurring in either extreme of life. In chart 8 the principal causes of death are arranged according to their importance as causes of death between the ages of 15 and 45 years, for the State of Maryland.

Tuberculosis of the lungs still easily retains first place on this chart. Typhoid fever, which ranks ninth on the preceding chart, comes in second place with this arrangement; pneumonia falls to the fourth place; accidental violence, which seems relatively unimportant in the preceding table, comes third in order of importance in the middle periods of life.

TABLE IX.

NINETEEN PRINCIPAL CAUSES OF DEATH IN MARYLAND, 1904.

	Deaths.	Per Cent.	Mortality Per 10,000.
1. Tuberculosis, Pulmonary and Laryngeal.....	2,669	12.94	21.45
2. Pneumonia.....	1,543	7.58	12.38
3. Organic Heart Disease.....	1,207	6.37	10.42
4. Diarrhœa of Infants.....	1,249	6.13	10.03
5. Nephritis, Chronic.....	1,190	5.84	9.56
6. Congenital Debility.....	973	4.78	7.82
7. Accidental Violence.....	785	3.88	6.31
8. Cerebral Hemorrhage.....	753	3.70	6.05
9. Senile Debility.....	751	3.69	6.03
10. Malignant Neoplasms.....	748	3.63	6.01
11. Typhoid Fever.....	508	2.49	4.09
12. Paralysis.....	392	1.94	3.15
13. Broncho-Pneumonia.....	371	1.82	2.98
14. Influenza.....	339	1.66	2.72
15. Gastric Disease.....	322	1.58	2.59
16. Meningitis.....	280	1.37	2.25
17. Convulsions.....	280	1.37	2.25
18. Bronchitis.....	271	1.33	2.18
19. Diphtheria.....	225	1.10	1.81

In Table X the principal diseases are divided according to the percentages occurring in the three periods of life already used (*vide supra*), with the exception of senile debility, congenital debility, infantile convulsions, unspecified and ill-defined causes, the three former of which fall by reason of their classification in only one period of life.

CAUSES OF DEATH

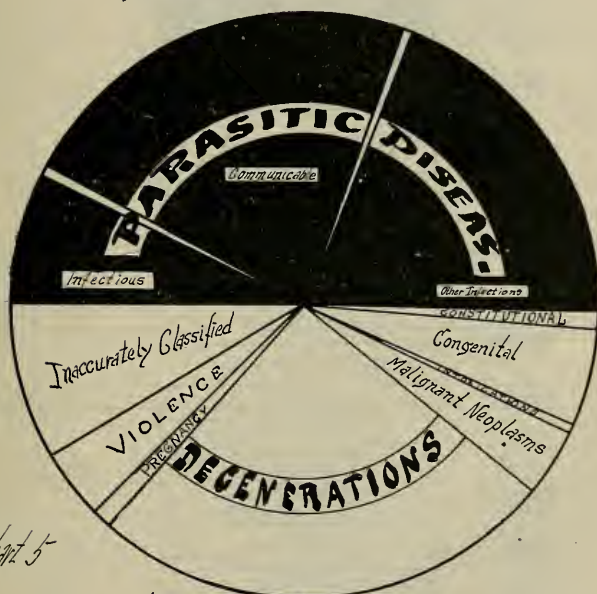


Chart 5-

Maryland Classification 1904

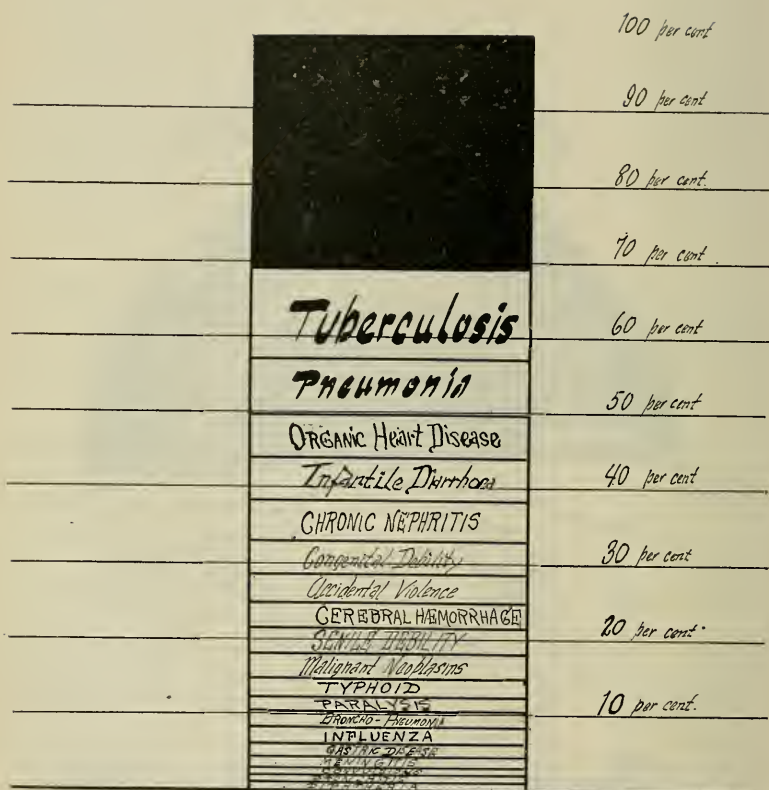
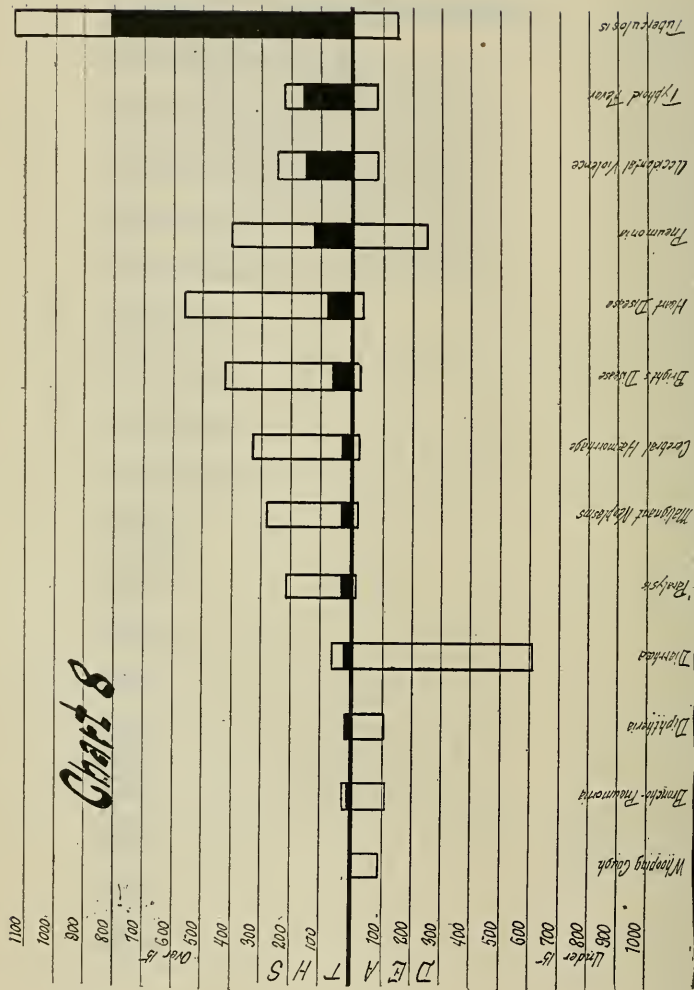


Chart 6. Nineteen Principal Causes of Death.



Principal causes of death classified according to their importance in the middle period of life.

AGE DISTRIBUTION OF PRINCIPAL DISEASES.

TABLE X.

DEATHS FROM FIFTEEN PRINCIPAL CAUSES IN MARYLAND (EXCLUSIVE OF BALTIMORE), 1904, SHOWING NUMBER AND PERCENTAGE OF DEATH IN EACH OF THREE AGE PERIODS.

	Number.	Per Cent. in Each Period.
TYPHOID FEVER.		
Under 15	84	28
15 to 45	161	53
45 and over.....	62	21
	307	
PARALYSIS.		
Under 15 ..	3	1
15 to 45.....	15	7
45 and over.....	213	93
	231	
BRIGHT'S DISEASE.		
Under 15	17	4
15 to 45.....	61	14
45 and over.....	363	82
	441	
WHOOPING-COUGH.		
Under 15	89	100
15 to 45	0	0
45 and over.....	0	0
	89	
HEART DISEASE.		
Under 15	35	6
15 to 45	81	14
45 and over.....	481	80
	597	
MALIGNANT NEOPLASMS.		
Under 15	6	2
15 to 45.....	29	10
45 and over.....	261	88
	296	
DIPHTHERIA.		
Under 15	103	94
15 to 45	6	6
45 and over.....	0	0
	109	

TABLE X—Continued.

	Number.	Per Cent. in Each Period.
BRONCHO-PNEUMONIA.		
Under 15	108	84
15 to 45.....	5	4
45 and over.....	18	13
	131	
ACCIDENTAL VIOLENCE.		
Under 15	87	26
15 to 45.....	158	47
45 and over.....	93	27
	338	
TUBERCULOSIS (Lungs and Larynx).		
Under 15	150	12
15 to 45.....	806	63
45 and over.....	316	25
	1,272	
PNEUMONIA.		
Under 15	259	39
15 to 45.....	122	19
45 and over.....	279	42
	660	
CEREBRAL HEMORRHAGE.		
Under 15	8	2
15 to 45.....	29	8
45 and over.....	331	90
	368	
DIARRHŒA AND ENTERITIS.		
Under 15	604	90
15 to 45.....	10	2
45 and over	56	8
	670	
OTHER CAUSES.		
Senile debility (over 55).....	515	.....
Congenital debility (under 5)	427	.....
Infantile convulsions (under 5)	144	.....
Unspecified and ill-defined causes.....	423	.....

The age distribution of the principal causes of death are shown in charts 10, 11, 12 and 13. The age distribution of the general mortality is shown in chart 9. The charts giving the age distribution of special diseases illustrate the principal

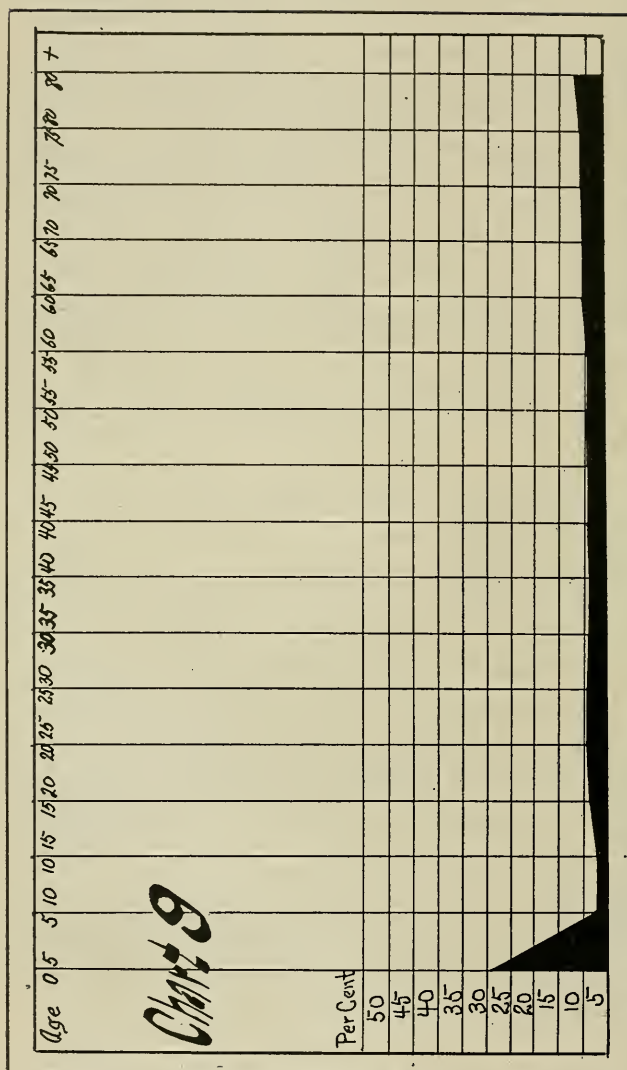
causes of death, with the exception of senile debility, congenital debility and infantile convulsions, (whose age distribution is fixed by their classification), and the unclassified diseases.

Thirty per cent. of the general mortality occurs under 5 years, then ranges below 5% during the succeeding quinquennial periods up to 60, after which it ranges between 5 and 10%.

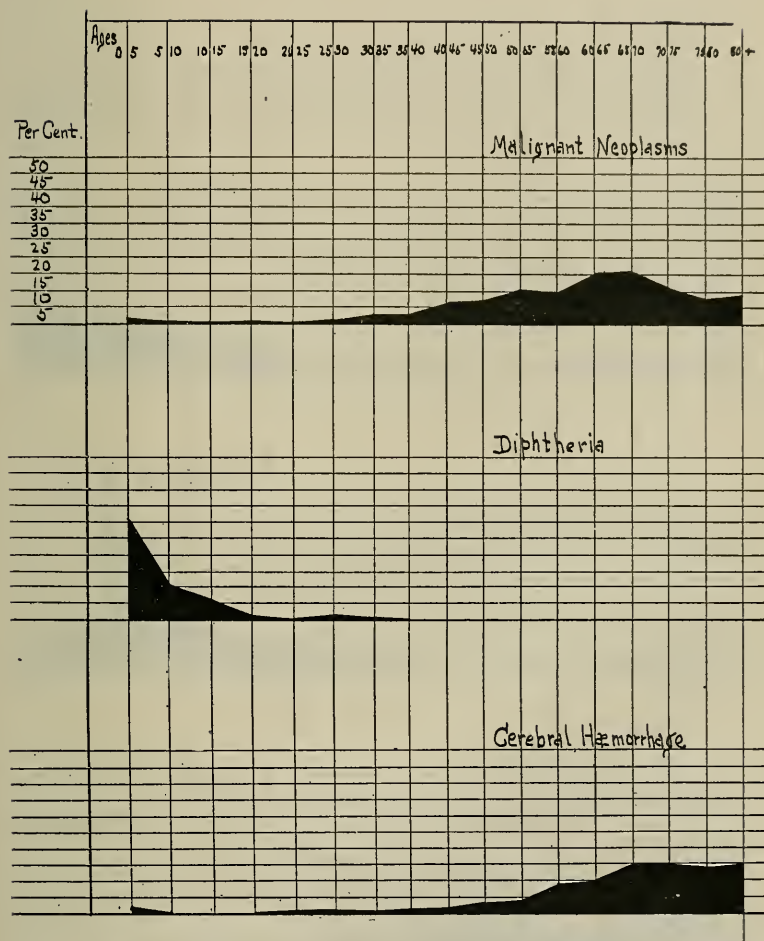
Pneumonia has an age distribution corresponding closely to the general mortality. The chart illustrates forcibly the fact that the term pneumonia, as returned in the death certificate is a generic one, 40% of this mortality occurs in the first quinquennial period. The quinquennial mortality rises above 5 per cent. after the age of 60. Certain of these diseases show an almost wholly infantile distribution, these are *broncho-pneumonia*, *whooping cough* and *diphtheria*. Of the mortality from whooping cough, 95% occurs in the first five years of life. No deaths occurred in Maryland from whooping cough after the age of ten years.

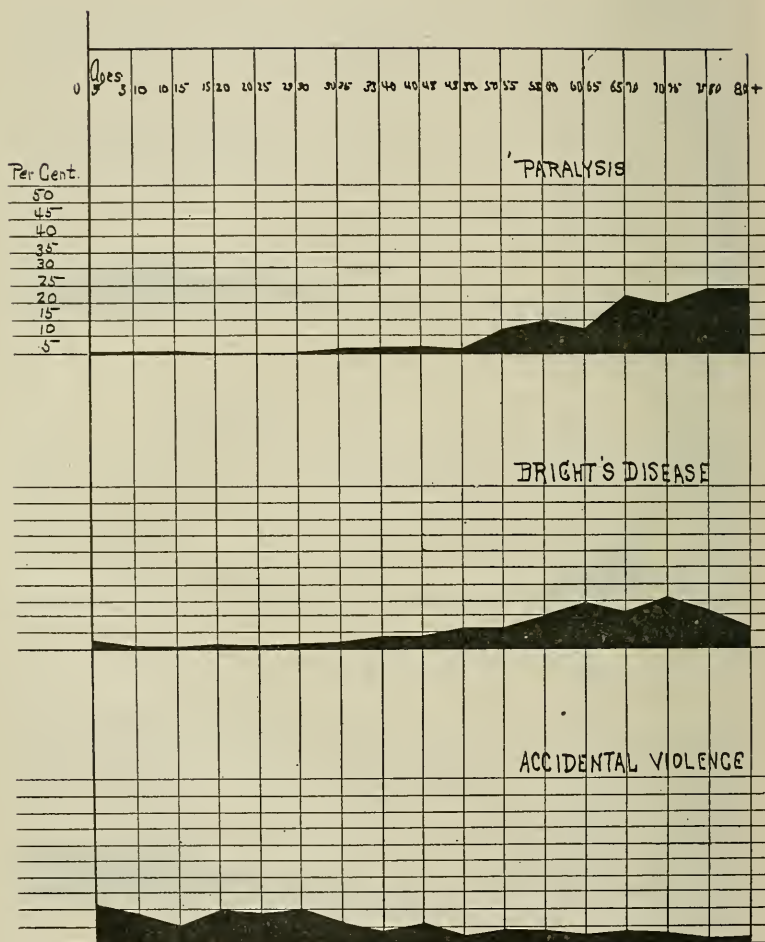
Organic diseases of the heart, malignant neoplasma, cerebral hemorrhage, paralysis and Bright's disease occur almost altogether in the late periods of life.

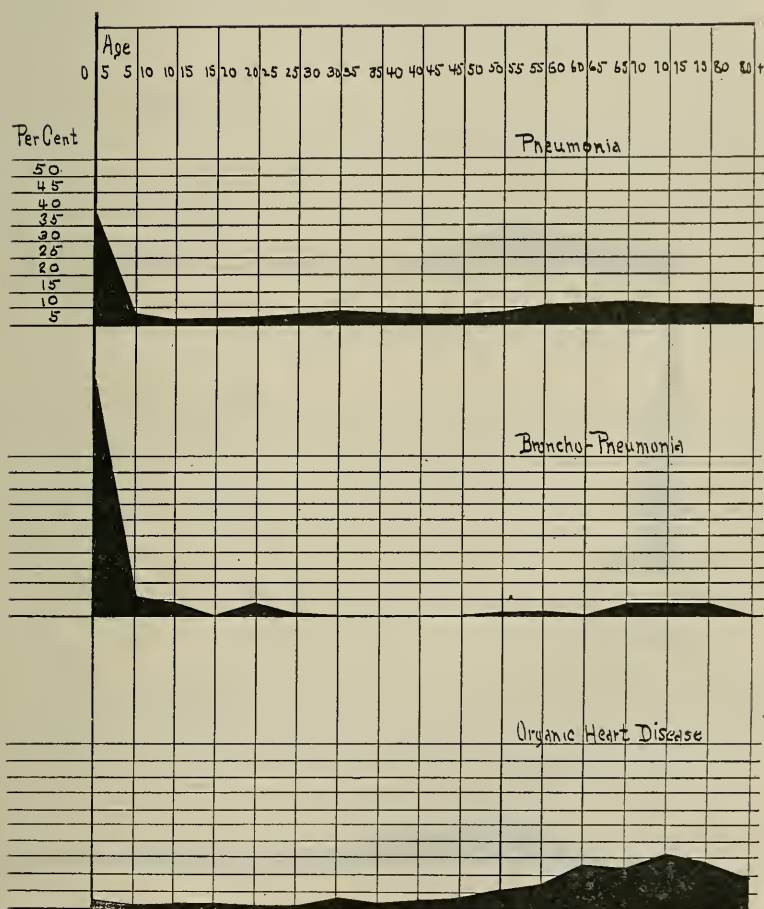
Tuberculosis is a disease of middle life. *Typhoid fever* is predominant in the early and middle periods of life, and reaches its greatest mortality in the fourth quinquennial period. *Accidental violence* has a mortality falling in great part below the age of thirty. The mortality from violence in infancy and childhood is probably higher in Maryland than in the other registration States. Accidental drowning accounts for many of these deaths in infancy and childhood and can be accounted for by the ready access to the water in Baltimore city and the counties bordering on Chesapeake bay, but the greater number, especially in infancy, are due to scalds and burns. Scalds and burns are especially prevalent among colored children, and are due to insufficient guardianship, defective heating and lighting arrangements, the wide spread use of gasoline for heating and cooking, especially in Baltimore, and the general carelessness of the colored people in handling fire.

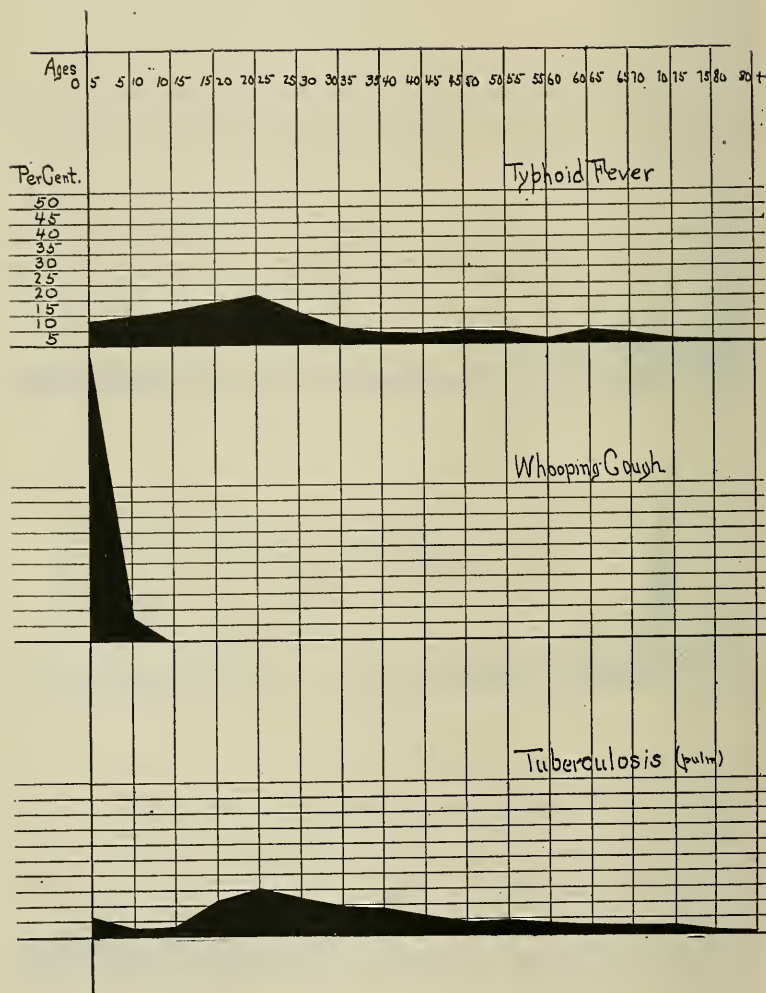


*Age Distribution of the General Mortality 1904
Maryland*









SEASONAL INCIDENCE OF THE MORTALITY.

The seasonal incidence of the general mortality is shown separately for Baltimore and the rural districts in Chart 14. It will be seen the mortality gives a somewhat oval figure to the charts, the poles lying in the winter and summer months. Generally speaking, the mortality may be divided into two classes, diseases of the intestines, prevalent in the summer months, and diseases of the lungs prevalent in the winter. The gastro-intestinal diseases reach their fastigium in the height of the summer.

June and October are the months of least mortality in Baltimore city and June and December in the rural districts. In the city the sudden rise from the month of least mortality (June) to the month of greatest mortality (July) is most striking. The highest mortality in the rural districts occurs one month later (August).

The excessive mortality during July and August is almost altogether due to the acute gastro intestinal diseases of children (cholera infantum).

The high mortality during the first three months of the year (January, February and March) is ascribed to pneumonia and epidemic diseases of the lungs (influenza).

While the summer mortality affects mainly children, the winter mortality affects the extremes of life (infancy and old age).

The figures on the charts give the actual number of deaths in the rural districts and in Baltimore city respectively, indicated by circles, described at intervals of 200, from 0 to 1200.

With nearly equal populations there are three months giving deaths under 700 in Baltimore city (June, October and December), while there are six in the rural districts (May, June, September, October, November and December).

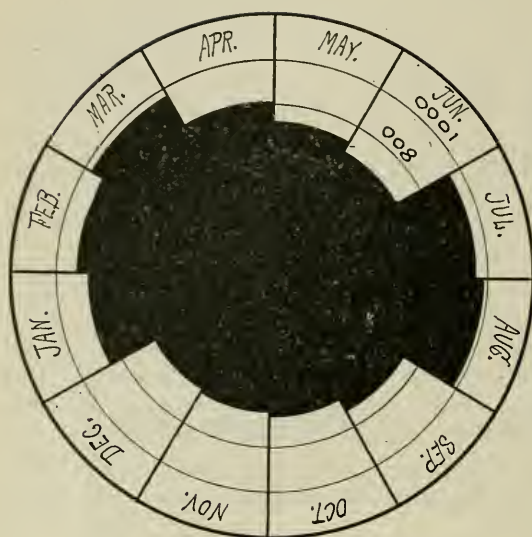
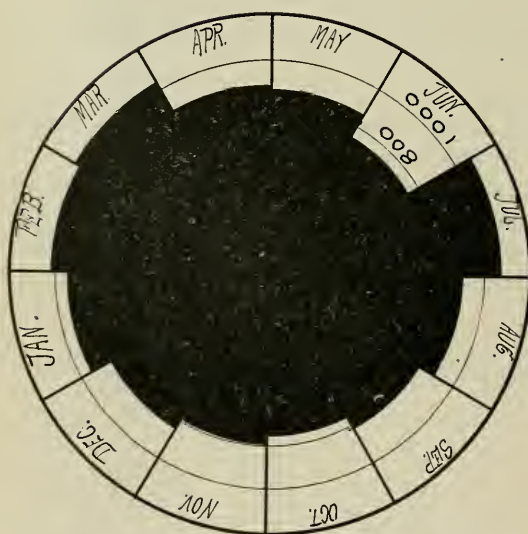
BALTIMORE
RURAL DISTRICTSBALTIMORE
DEATHS BY MONTH

Chart 14. Deaths by Months
Maryland 1904

The seasonal prevalence of eight prominent causes of death is given in the succeeding chart. (Chart 15.)

In considering seasonal prevalence two classes of diseases must be recognized—

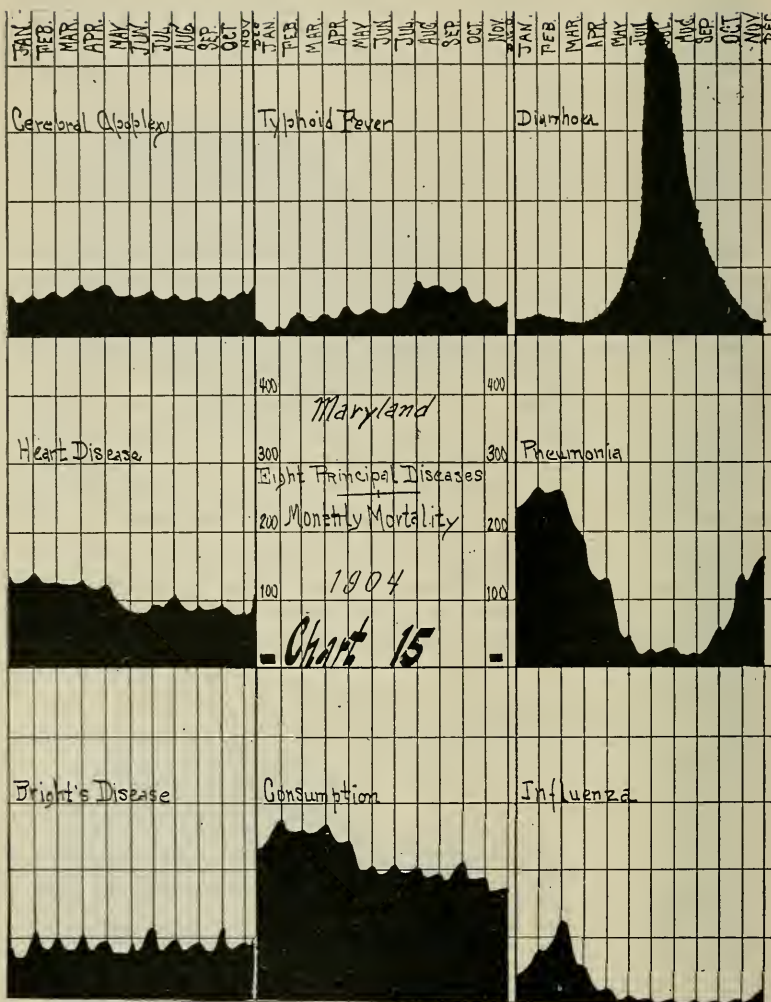
1. Acute fatal diseases where the period of infection corresponds more or less closely with the period of death.
2. Chronic fatal diseases where the date of death is separated by a long interval from the date of infection.

Among the former are typhoid fever, diarrhœa, influenza and pneumonia; among the latter, consumption, cerebral apoplexy, heart disease and Bright's disease.

Since persons subject to chronic diseases usually die of acute infections of some sort, the acute infections exercise a more or less marked influence on the seasonal mortality from chronic diseases. The influence of pneumonia and influenza upon the monthly mortality from tuberculosis may be seen in a glance of the chart. The influence of these acute diseases upon heart disease, cerebral apoplexy and Bright's disease, is less noticeable. Cerebral apoplexy shows little seasonal variation.

A close correspondence may be noted in the pneumonia and influenza curves. There is a remarkable antithesis between the seasonable variations of the pneumonia and diarrhœal mortalities.

The most marked seasonal variation is in diarrhœa. Pneumonia, influenza and typhoid fever also show marked seasonal variation.



INFECTIONS OF ORGANS.

The succeeding table and chart (chart 16, table XI), show the comparative susceptibility of the several organs to infection. In general, the table and charts have been arranged so as to show infections of the specified organ and systemic infections, principally of the specified organ. The total number of deaths considered in this table is 10,514, or about one-half of the total mortality. Certain other important classes of diseases, such as degenerations, congenital diseases and accidents are not considered in the tabulation.

It will be seen by reference to the table and chart that the mass of the inflammatory diseases affect the lungs and alimentary canal, infections of the lung ranking very much higher than those of the other organs.

The special predilection of the tubercule bacillus for the lung has been previously recognized, but the fact that the majority of pathogenic organism find in the lungs their most favorable habitat is not so well recognized. The organisms of the enteric group are of course an exception to this rule.

TABLE XI.

PARASITIC DISEASES SHOWING THE ORGAN AFFECTED.

Respiratory Infections—

Influenza, laryngeal and pulmonary tuberculosis, bronchitis, broncho-pneumonia, pneumonia, pleurisy..... 5,702

Systemic Infections, Principally Respiratory—

Measles, scarlet fever, whooping cough, diphtheria..... 573

6,275
Infections of the Alimentary Tract—

Typhoid fever, cholera, dysentery, abdominal tuberculosis, gastritis, enteritis, cholera infantum, peritonitis, appendicitis.....

2,594

Infections of the Urinary Tract—

Perinephritis, pyonephrosis, pyelitis, cystitis, nephrolithiasis

78

Systemic Infections, Principally of the Kidneys—

Acute nephritis, other inflammations of the kidneys and their adnexa.....

409

487
Infections of the Nervous System—

Rabies, meningeal tuberculosis, encephalitis, meningitis tetanus.....

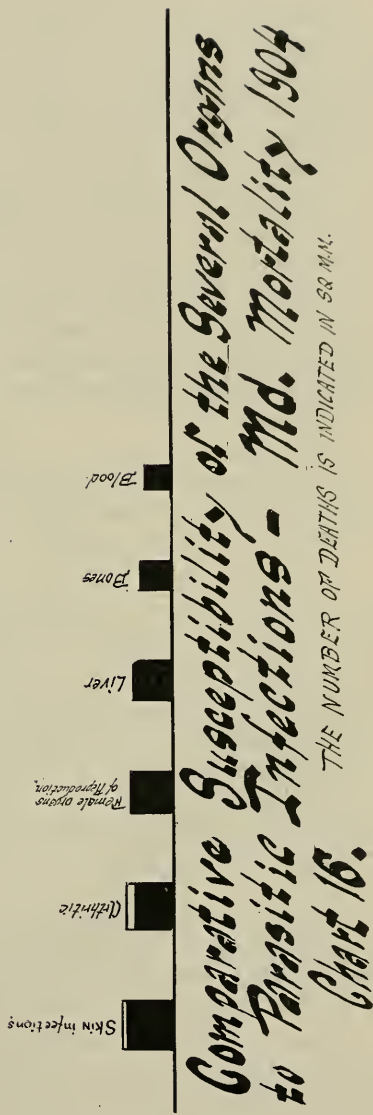
402

Systemic Infections (not localized in any organ or tissue) —

Pyæmia and septicaemia, general tuberculosis, syphilis.

209

<i>Infections of the Skin—</i>		
Erysipelas, gangrene, abscess and furuncle, dermatitis. .	128	
<i>Systemic Infections, Principally of the Skin</i>	9	137
<i>Arthritic Infections—</i>		
Acute rheumatism.....	110	
<i>Systemic Infections, Principally Arthritic—</i>		
Chronic rheumatism, gout.....	21	131
<i>Infections of the Female Organs of Reproduction—</i>		
Endometritis, metritis, salpingitis, puerperal septicamia.		104
<i>Infections of the Liver—</i>		
Cholangitis, hepatitis, choleolithiasis.....		94
<i>Infections of the Bones—</i>		
Tuberculosis, osteomyelitis.....		45
<i>Infections of the Blood—</i>		
Malaria.....		36
Total.....		10,514



SPECIAL CAUSES OF DEATH.

Tables A, B and C, at the end of the report on Vital Statistics, give the causes of death, the number of each race and sex, the number dying in each county; the age at death; the seasonal distribution of the mortality for the 179 principal causes of death recognized in the international classification.

Many of the diseases recognized in this classification are only important causes of mortality during epidemics, and are not commonly prevalent in this State. Others are limited to Europe or the smaller geographical or climatic divisions.

Among the diseases of the Bertillon classification, from which there were no deaths in Maryland during 1904, were typhus fever, relapsing fever, miliary fever, asiatic cholera, bubonic plague, yellow fever, leprosy, glanders, anthrax and pellagra.

Small-pox—There were 5 deaths from small-pox reported from the rural districts of Maryland and 4 in Baltimore city during 1904. Of the rural deaths, 2 occurred in Frederick county and 1 each in Garrett, Harford and Talbot counties.

Rabies—Deaths in Baltimore city, 4. In Baltimore county one white woman died of hydrophobia.

Alcoholism—Deaths in Baltimore city, 41; in the counties, 26. With a somewhat smaller population Baltimore had a number of deaths from alcoholism very much in excess of that in the rural districts, though this is accounted for to a large extent by the number of cases of delirium tremens and other fatal forms of alcoholism in non-residents treated in the city hospitals. The death rate in the local option counties is about equal to that in the other counties which allow the sale of liquor.

Insanity and Epilepsy—The majority of deaths from these causes occurred in the counties in which hospitals for the insane are located. Baltimore county, 55; Carroll, 17; Baltimore city, 15. (87 out of a total of 103.)

Tetanus—There were 49 deaths from tetanus in the State during 1904. Of these, 25 occurred in the rural districts and 24 in Baltimore city. Undoubtedly a large number of the deaths reported in Baltimore city were infected in the rural districts and brought to Baltimore for treatment after the characteristic symptoms of the disease had appeared.

Among the counties, Anne Arundel returned 8 deaths, Baltimore county 5 and Worcester 3. Single deaths were reported from other counties. The unfortunate pre-eminence of tetanus in Anne Arundel county has existed several years. The great part of these deaths occurred in the new born in the form known as trismus nascentium. Of the eight deaths reported from this county in 1904, 7 were under the age of two years. Of these deaths 3 were white and 5 colored; 4 were male and 4 female.

While this number of deaths formed only a small proportion of the deaths in Anne Arundel county (617), the deadly and painful nature of the disease and the ease of prevention should make it incumbent upon physicians in the county, and especially in Annapolis, to carefully instruct midwives and nurses having charge of the new born in the simple and necessary measures of asepsis.

Hydatid tumors of the liver—One death was reported from this cause in Baltimore county. This disease is caused by the cysticercus stage of some of the taniæ (tape-worms), which are usually rare in this country.

Intestinal parasites caused two deaths in Baltimore city. The commonest intestinal parasite in the United States is the *Uncinaria Americana*. This occurs only rarely in Maryland.

Pregnancy cause a little less than one per cent. of the total mortality. About one-half of this mortality is distinctly preventable, *e. g.*, nearly all of puerperal septicæmia and most of the mortality from hemorrhage.

Suicide caused about one-half of one per cent. of the total mortality. The most frequent form was suicide by poison, and the next most frequent suicide by shooting.

Accidental violence caused 3.88% of the total mortality in 1904. Among special forms of violence other than mechanical, burns and scalds predominated, (134 deaths); next in order was accidental drowning, (123 deaths).

Among the deaths from mechanical violence Allegany county furnished the greatest proportion, (58 deaths, or nearly 7% of the total mortality). Most of these deaths occurred in the mines. Of the deaths between the ages of 15 and 60 in Allegany county during 1904, 13.6% were from violence.

Eleven deaths by lightning were returned in 1904, all of which occurred in the rural districts; 4 in Baltimore county, and 2 each in Caroline and Washington; 1 each in Allegany, Anne Arundel and Kent.

This is an unusual cause of death in any large city. It is very seldom that deaths occur in Baltimore from this cause. Aside from the influence of lightning rods, the electric wires, high steeples and the heated currents of moist air and steam arising from city buildings usually favor the silent discharge of electrically charged clouds, and usually prevent the violent disruptive discharges frequent in country districts.

A considerable number of the deaths from lightning occurring in the country are due to the dangerous custom of taking refuge under trees during an electrical storm.

Unspecified and ill-defined causes—The percentage of unknown or indefinite causes of death returned in 1904 was 2.81 per cent. This classification does not include a number of absolutely indefinite causes, such as hemorrhage, dropsy, sudden death, convulsions, etc.

DURATION OF LIFE.

The third important element in the statistical consideration of the population is the duration of life. The main purpose in the organization of sanitary jurisdictions is to increase the duration of life, and the executive powers and functions of the jurisdiction should always be directed to this point.

The duration of life is usually shown statistically by tables illustrating the mean duration and expectancy of life of those living at given ages.

These tables were considered by Dr. Farr to represent the health and prosperity of the country, and to furnish a fair estimate of its living capital. Dr. Farr considered a table constructed in this way to be a fair measure of the *life* of the community, and hence it was called by him a *biometer*.

Other tables popularly used by insurance companies are tables of *survivorship* and tables showing the probability of living for a stated period at a given age—the *probability of living one year* being the factor generally employed in the construction of this class of tables.

The tables of duration of life are frequently graphically shown by a system of co-ordinates of age and duration, or age

and expectancy. These graphic curves have great illustrative value in vital statistics, but tables and curves of duration of life are open to some objections for sanitary purposes.

From the method of construction of this class of tables, only mean figures can be determined—the extremes of either great or brief duration of life are largely lost, and the eccentricities of the curve, which are of great sanitary importance, are not apparent.

All tables of duration of life are prognostic of the future, the conditions of life in any given year being assumed to remain constant during a future period of years, *i. e.*, 100 or 50 years. The particular problem which interests the sanitarian is, at what period of life does the mortality occur? His problem is directed in general to increasing the duration of life and the results of the work will show in the small number of deaths in the early periods of life and the increase in the number of deaths at an advanced age. This calculation is best stated in tables and charts of survivorship. Such tables and charts should illustrate in the population of the State under sanitary conditions present in the year of calculation, the number of the population living and the number dead at succeeding age periods. The Maryland biometer is shown in the chart in quinquennial periods for the year 1904, assuming the death rate of that year to remain constant. Instead of considering the whole population as a basis the scale is reduced to a population of 10,000 for convenience of comparison with succeeding years. Thus of a population of 10,000 born in Maryland during 1904, how many will be living and how many dead at the end of 5 years? of ten years? etc. This table and chart indicates survivorship and gives both the number of living and dead at each quinquennial period after 1904.

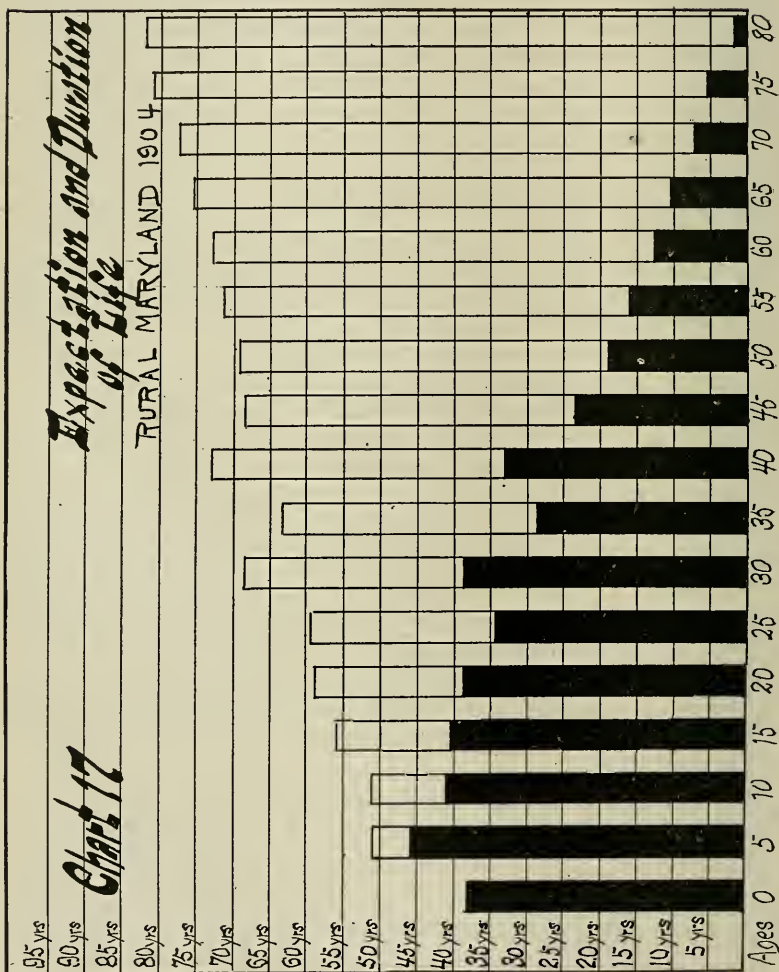
Dr. Farr's biometer is graphically indicated in Chart 17, the figures upon which it is based appear in Table XII. This chart gives the expectation and duration of life in Maryland in the year 1904.

TABLE XII—EXPECTATION OF LIFE IN MARYLAND, 1904.

Age.	Expectation of life.
0	38.08 years.
5	46.14 "
10	42.62 "
15	41.98 "
20	38.19 "
25	34.12 "
30	38.19 "

TABLE XII—Continued.

Age.	Expectation of Life.
35.....	28.18 years.
40.....	33.15 "
45.....	23.11 "
50.....	19.66 "
55.....	16.39 "
60.....	13.24 "
65.....	10.51 "
70.....	7.84 "
75.....	5.30 "
80.....	2.00 "



MARYLAND BIOMETER.

This biometer is constructed on a table of survivorship, in which ten thousand persons born in a given year are traced throughout life under the sanitary conditions of the year of computation as indicated by the mortality returns.

If the death rates for the several age periods are determined for any given year, we may by applying these rates to the estimated population of this year, construct a table of survivorship showing the number surviving at certain periods thereafter among those born in the given year.

Thus, of 10,000 persons born in Maryland during 1904, we have to determine the number surviving at the end of five years, of ten years, etc.; providing the death rate of 1904 remains constant. A chart constructed from this table will indicate the sanitary condition of the State during the year 1904, and described in the manner presently to be mentioned, forms the "Maryland Biometer." Such charts possess greater value for sanitary purposes than biometers constructed on duration and expectancy of life, inasmuch as eccentricities produced by unusual mortalities at certain age periods, will appear in the curve and are not obliterated by compensatory variations in the later periods of life, such as frequently occur in charts of duration and expectancy; also, both the number of dead and living are shown at each quinquennial period following after 1904.

Such charts readily admit of comparison with preceding or following years, as variations in the mortality at the various ages appear in the curve in their proper positions, and do not (as in the expectancy tables) merely modify the form of the curve.

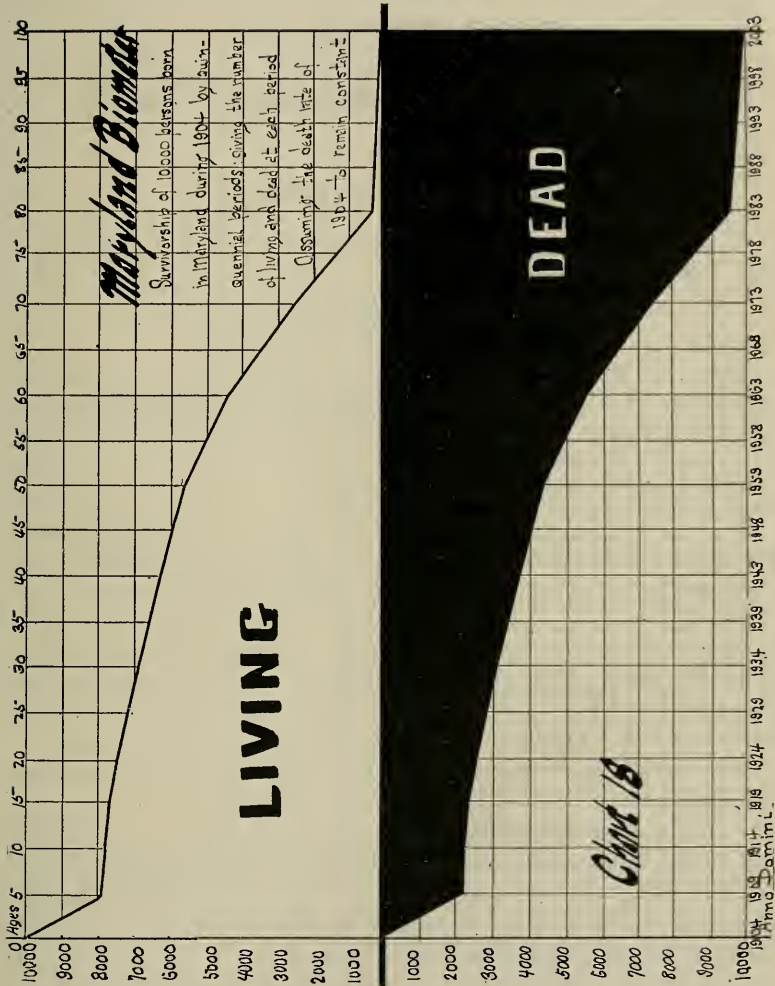
The only factors necessary in the construction of this curve are the mortality rates for the several age periods (0-5, 5-10, etc.), which may be applied first to the original population of 10,000, then to the remaining population after deducting the deaths from 0-5, etc. Applying the death rates obtained from table VIII to 10,000 persons born in 1904, the survivorship at succeeding quinquennial periods is shown in table XIII.

TABLE XIII.
SURVIVORSHIP OF MARYLAND, 1904.

NUMBER OF PERSONS SURVIVING OF PERSONS BORN IN 1904 AT SUCCEEDING
QUINQUENNIAL PERIODS, ASSUMING THE DEATH RATE OF THAT
YEAR TO REMAIN CONSTANT.

Number born in 1904.....	10,000
Number reaching the age of five years (A. D. 1909).....	7,910
Number reaching the age of ten years (A. D. 1914).....	7,762
Number reaching the age of fifteen years (A. D. 1919).....	7,659
Number reaching the age of twenty years (A. D. 1924).....	7,448
Number reaching the age of thirty years (A. D. 1934).....	6,870
Number reaching the age of forty years (A. D. 1944).....	6,227
Number reaching the age of fifty years (A. D. 1954).....	5,520
Number reaching the age of sixty years (A. D. 1964).....	4,336
Number reaching the age of seventy years (A. D. 1974).....	2,465
Number reaching the age of eighty years (A. D. 1984).....	238

The biometer is graphically shown in Chart 18. This method is of value for graphic representation, because it indicates not only the number of living, but the number of dead at each quinquennial period. It is evident that all of those represented among the living at the top of the chart must eventually cross beneath the line to join the dead, but it is in the form of the curve by which they pass over that the hygienic condition of the State is indicated.



REPORTS OF County and Town Boards of Health.

ALLEGANY COUNTY.

CUMBERLAND, January 1, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

Dear Doctor: I herewith have the honor to submit my report as Health Officer for Allegany county for the year of 1904, from May 1st to January 31st, as I have served only for the past eight months. I will add the report for the city of Cumberland, covering the same period.

I have investigated and abated a number of minor nuisances, and may report the county to be in a fair sanitary condition.

There have been reported to me, outside of the cities of Cumberland, Frostburg and Lonaconing, the following contagious diseases: Scarlet fever, 17 cases; tuberculosis, 3 cases; typhoid fever, 118 cases; diphtheria, 7 cases; measles, 15 cases; pertussis, 2 cases; spinal meningitis, 1 case; chicken-pox, 19 cases; mumps, 1 case; impetigo contagiosa, 1 case.

The majority of the cases of typhoid fever occurred in Mt. Savage, with the next largest number in Barton.

In August we found the epidemic of typhoid fever so alarming at Mt. Savage that we were obliged to ask assistance of the State Board, when Dr. Marshall Langton Price was sent up, and with his valuable aid we were enabled to stamp out the disease within a remarkably short period.

There were 254 births and 137 deaths reported in the county, outside of the three incorporated cities, during the last eight months of the year.

As Secretary of the Board of Health of the city of Cumberland, I find that I had reported the following contagious diseases:

Scarlet fever, 10 cases ; tuberculosis, 3 cases ; typhoid fever, 75 cases ; diphtheria, 30 cases ; measles, 1 case ; mumps, 7 cases ; chicken-pox, 21 cases ; pertussis, 1 case. Births, 392, and deaths, 308.

Respectfully,

C. H. BRACE,
Health Office, Allegany county.

ANNE ARUNDEL COUNTY.

ANNAPOLIS, Md., January 18, 1905.

DR. JOHN S. FULTON,

Secretary of State Board of Maryland.

I hereby report the births, deaths and diseases in Anne Arundel county for the year 1904:

BIRTHS.

White Males.....	114	Colored Males.....	46
White Females.....	114	Colored Females.....	46
	228		92

DEATHS.

White Males.....	112	Colored Males.....	90
White Females.....	104	Colored Females.....	91
	216		181

DISEASES.

Apoplexy.....	6	Teething.....	2
Anemia.....	1	General Anasarca.....	2
Articular Rheumatism.....	1	Arterio Sclerosis.....	2
Accident.....	6	Blood Poisoning.....	1
Asthenia.....	1	Bright's Disease.....	11
Asphyxia.....	1	Bronchitis.....	8
Angina Pectoris.....	1	Bilious Dysentery.....	1
Alcoholism.....	1	Obstruction of Bowels.....	2
Asthma.....	3	Cancer.....	3
Carbuncle.....	1	Cholera Infantum.....	39
Carcinoma of Uterus.....	1	Gastro Enteritis.....	3
Convulsions.....	3	Hanged.....	1
Coma.....	1	Valv. Disease of Heart.....	9
Cerebro Spinal Meningitis.....	2	Hemorrhage Placental.....	1
Carcinoma.....	1	Hydrocephalus.....	1
Infantile Convulsions.....	3	Hemorrhage.....	3

DISEASES—Continued.

Dropsy.....	2	Heart Failure.....	6
Diphtheria.....	1	Fatty Degeneration of Heart.....	1
Senile Debility.....	4	Mal. Assimilation.....	1
Drowning.....	6	Acute Indigestion.....	3
Dysentery.....	8	Intestinal Tuberculosis.....	1
Pneumonia.....	26	Lightning Stroke.....	1
Paralysis.....	12	Lockjaw.....	1
Peritonitis.....	3	Measles.....	2
Pyemia.....	1	Mitral Stenosis.....	1
Puerperal Eclampsia.....	2	Marasmus.....	20
Still-born.....	4	Mitral Regurgitation.....	1
Scarlet Fever.....	1	Meningitis.....	2
Septicemia.....	2	Nephritis.....	1
Typhoid Fever.....	12	Chronic Nephritis.....	2
Uraemia.....	1	Natural Causes.....	2
Diarrhœa.....	8	Old Age.....	7
Epilepsy.....	1	Pulmonary Oedema.....	1
Exhaustion.....	5	Puerperal Fever.....	1
Entero-Colitis.....	16	Puerperal Convulsions.....	1
Gun-shot.....	2	Ptomaine Poisoning.....	1
Chronic Gastritis.....	1	Sun Stroke.....	1
La Grippe.....	5	Spasms.....	3
Suicide.....	1	Tuberculosis.....	63

Only a few mild cases of typhoid fever, scarlet fever and diphtheria have been reported. No cases of small-pox.

Respectfully submitted,

H. R. WALTON, M. D., Health Officer.

BALTIMORE COUNTY.

First District.

CATONSVILLE, January 1, 1905.

DR. J. S. FULTON,

Secretary State Board of Health.

Dear Doctor: The following statistics, which are very near accurate, will be the basis of my report for 1904. Would state that only 4 cases of typhoid fever were reported, but not one on line of Water Company's route.

The death statistics are those outside of public institutions, as they issue their own permits, and I have no record of same. I think that these cards should be first sent to health officer of district before being sent to the State Board.

My district has a population of about 10,000, and I consider the appended report very good. Would state that school children in district have been thoroughly vaccinated.

Contagious diseases reported: varicella, 3; measles, 7; scarlet fever, 10; diphtheria, 4; mumps, 5; typhoid, 4.

Births, 105. Deaths, 141.

Following causes of death: phthisis pulmonalis, 22; pneumonia, 15; senile decay, or old age, 12; valvular disease of heart, 11; Bright's disease, 7; cerebral hemorrhage, 7; paresis, 5; entero-colitis, 5; cholera infantum, 4; premature birth, 4; marasmus, 4; bronchitis, 4; cerebro spinal meningitis, 3; apoplexy, 2; la grippe, 3; chronic rheumatism, 2; dropsy, 2; cancer of liver, 2; diabetes, 2.

And one each of following diseases: arterio-sclerosis; uterine cancer, pistol shot wound, measles, cirrhosis of liver, abortion, angina pectoris, cancer of breast, cardiac asthma, cancer of stomach, osteo myelitis of femur, whooping cough, lock-jaw, intussusceptum of bowel, convulsions, teething, pregnancy, hydrophobia, appendicitis, cancer of lung, typhoid fever, alcoholism, indigestion, gall stones, opium poisoning, unknown.

Very respectfully submitted,

C. L. MATTFELDT, M. D., Health Officer:

BALTIMORE COUNTY—*Second District.*

DR. JOHN E. BOLTE TYLER, Health Officer. No report.

BALTIMORE COUNTY—*Third District.*

PIKESVILLE, January 1, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

From January 1st, 1904, to January 1st, 1905: Deaths, 150; births, 44. The following number of diseases have been reported: Scarlet fever, 7 cases; diphtheria, 26 cases; chicken-pox, 12 cases; whooping cough, 1 case; mumps, 3 cases; measles, 39 cases.

Respectfully submitted,

HENRY A. NAYLOR, M. D., Health Officer.

BALTIMORE COUNTY—*Fourth District.*

REISTERSTOWN, January 13, 1905.

DR. JOHN S. FULTON, M.D.,

Secretary State Board of Health.

Dear Sir: I herewith enclose my report for the Fourth Election District of Baltimore county for the year beginning October 1st, 1903, and ending October 1st, 1904.

Sixty-nine burial permits have been issued and forty-nine births reported during this period. There have been reported thirteen cases of typhoid fever, one of which proved fatal; three cases of scarlet fever and twelve cases of diphtheria. Antitoxin was used upon all the cases of the latter disease, all of which made rapid recoveries. Quite a number of school children were vaccinated. I have thoroughly fumigated all houses where contagious and infectious diseases have been reported.

Very respectfully,

H. M. SLADE, M. D., Health Officer.

BALTIMORE COUNTY—*Fifth District.*

Dr. B. F. PRICE, Sanitary Officer. No report.

BALTIMORE COUNTY—*Sixth District.*

FREELAND, MD., January 13, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health, Baltimore, Md.

Dear Doctor: I hereby submit my report as Health Officer for the Sixth district of Baltimore county for 1904:

Births, males, 18; females, 15—33. Deaths, males, 14; females, 13—27. Deaths, pulmonary tuberculosis, 4; apoplexy, 4; diphtheria, 3; dysentery, 2; erysipalis, 1; dropsy, 1; paralysis, 3; gastritis, 1; pneumonia, 1; croup, 1; pulmonary congestion (scalded), 1; burns (explosion in the Powder Mill), 1; nephritis, 2; la grippe, 1; ulcer of stomach, 1; aortic regurgt., 1.

Personally I have visited our schools and vaccinated the pupils. The schools visited were in a good hygienic condition.

Scarlet fever and mumps have prevailed, but each of a mild type. Several cases of typhoid fever have occurred, but no deaths have resulted.

I can but express my grateful acknowledgment to Dr. Wm. R. Stokes, for his invaluable aid for a microscopic examination of a specimen in an obscure case of typhoid fever, confirming my diagnosis.

I cannot close my brief report without impressing upon the profession the duty we owe to society to call the attention of the people to the scientific fact, that consumption, "The White Plague," the "Scourge of Mankind," *can be restricted*; and that preventable measures are to a certain extent in reach of all. We must enlist the services of society at large. *Pure food, pure air, pure drinks!*

Respectfully submitted, very truly yours,

JOSEPH S. BALDWIN, M. D., Health Officer.

BALTIMORE COUNTY—*Seventh District.*

DR. THOS. BALDWIN, Sanitary Officer. No report.

BALTIMORE COUNTY—*Eighth District.*

DR. T. ROSS PAYNE, Sanitary Officer. No report.

BALTIMORE COUNTY—*Ninth District.*

TOWSON, Md., January 16, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Dear Doctor: In reply to your request for my annual report, I beg to say that I was appointed sanitary officer for the ninth district for the month of April, 1904, to fill out a vacancy, and appointed May 1, 1904, to May 1, 1905.

The reports of births, deaths and contagious diseases have been forwarded to your office regularly by the 10th of each month, no copies being retained except as regards deaths, stubs of which are in the books now in my possession from September, 1901, to the present time.

To preserve these stubs I have requested the Clerk to the County Commissioners to take charge of them in the Commissioners' office, but was told to hold them. As you have the original reports in your office, I am at loss to know what shall be done with them except to hold them until called for. There are no reports of any contagious diseases at the present in the ninth district.

The County Board of Health will meet in Towson on or about February 15th, when you can communicate directly with them if you so desire.

Yours truly,
R. C. MASSENBURG, M. D., Health Officer.

BALTIMORE COUNTY—*Tenth District.*

MANOR GLEN, December 31, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Doctor:—The certificates of death are fairly complete, a few being sent in by way of the 11th district, which should be returned to me from your office in order to keep my books complete.

The births are never as complete owing to the failure of midwives to report their cases.

There was one out-break of Diphtheria which occurred in my practice during the summer, but not in my district. The patients, two in number, were in Harford Co., and one contracted the disease from the other. Both cases were mild and the membrane limited to the mouth and pharynx. They were quarantined and antitoxine used, not only on the ones affected but each member of both families. The result was it was stamped out without any other cases occurring.

These cases were reported promptly to Dr. Smithson, being in his jurisdiction, and both houses were thoroughly fumigated.

I would suggest that in diphtheria and scarlet fever, a color should be adopted, red or yellow, or some other very noticeable one, and notices printed on paper of that shade, that these houses shall not be entered by visitors without permission of the health officer of the district, and a penalty stated for violation or destruction of said notice.

Births, 4 ; deaths, 10.

Causes of death:—Grip, dropsy, paralysis, broncho-pneumonia, lobar pneumonia, tubercular pleuritis, pericarditis, cancer of liver, open foramen ovale, suicide by hanging—one of each. We have had about the usual number of cases of typhoid fever. One patient, a boy, aged four years, recovered. Another case of typhoid was complicated by suppuration of a mesenteric gland and formation of intestinal adhesions. A laparotomy was performed with drainage, and recovery resulted.

Have had no complaints about contamination of water. School 9 in this district should have attention. The cellar which is used for storing coal is not light and contains from 6 to 8 inches of water, which drains back into it as fast as it is dipped out. The walls should be cemented and floor concreted. The school house is so small that it could be done at small cost.

Yours respectfully,

THOMAS H. EMORY, M. D., Health Officer.

BALTIMORE COUNTY—*Eleventh District.*

FORK, Dec. 1, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Dear Sir: I herewith send report as sanitary officer and registrar for 11th District, Baltimore County, from January 1st, 1904, to January 1st, 1905.

Number of deaths recorded, 75. Number of births recorded, 15. Number of houses disinfected, 5. Number of water analyses, residence, (private) 3.

Respectfully Submitted,

JAMES F. H. GORSUCH, M. D., Health Officer.

BALTIMORE COUNTY—*Twelfth District.*

DR. CALEB N. ATHEY, Health Officer. No report.

BALTIMORE COUNTY—*Thirteenth District.*

DR. FRANK H. RUHL, Sanitary Officer. No report.

BALTIMORE COUNTY—*Fourteenth District.*

DR. WILLIAM D. CORSE, Sanitary Officer. No report.

BALTIMORE COUNTY—*Fifteenth District.*

MIDDLE RIVER, MD., January 1, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Report covers interval between December 1, 1903, and December 31, 1904.

Number of deaths, 103; number of births, 130. Contagious diseases reported: Diphtheria, 33; scarlet fever, 9; measles, 3; mumps, 2; typhoid fever, 14; pertussis, 2; chicken-pox, 2—65. Disinfection done when necessary; general health of district good.

JOHN W. HARRISON, M. D., Health Officer.

CALVERT COUNTY.

BARSTOW, MD.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Report from May 1 to December 31, 1904: *Births*—White, male, 54; white, female, 48; colored, male, 37; colored, female, 26—total, 165.

Deaths—White, 36; colored, 47—total, 83.

Cause of deaths: Cystitis, 1; malaria, 3; cancer, 3; burns, 3; bronchitis, 2; pneumonia, 5; thrush, 1; consumption, 21; intestinal obstruction, 1; senile decay, 2; still-born, 3; whooping cough, 1; valvular disease of heart, 6; gastric enteritis, 6; suicide, 1; gunshot wound, 1; jaundice, 1; inanition, 4; typhoid fever, 5; general debility, 2; gastritis, 1; diarrhoea, 1; gastric intestinal catarrh, 2; hemorrhage, 2; Bright's disease, 1; acute indigestion, 1; ptomaine poisoning, 1; cholera infantum, 1; convulsions, 1.

There have been twenty-three cases typhoid fever reported, and three cases whooping cough. The source of infection in most of the typhoid cases was traced to impure water. Every precaution was taken by me and the attending physicians to prevent any further spread of the disease.

Births and deaths have been promptly and regularly reported by all the physicians of the county. Midwives were somewhat slow in sending in their reports at first, but after writing them, stating the requirements of law, they have reported promptly. The schools have been visited quarterly by the vaccine physicians. A few cases of scarlet fever were reported to me by residents of Chesapeake Beach, but after investigation proved not to be scarlet fever.

Respectfully submitted,

I. N. KING, M. D., Health Officer.

CAROLINE COUNTY.

DR. ENOCH GEORGE, Health Officer. No report.

CARROLL COUNTY.

January 21, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

Dear Doctor: I beg to submit the following report for the year ending December 31st, 1904. We have not had any special epidemics during the year. Typhoid fever was not as prevalent as in 1903. Diphtheria in some sections was of a very severe type, with a number of deaths; in other sections it was mild in form and no fatalities. Scarlet fever and measles gave about the usual number of cases, with very few fatalities. Whooping cough and mumps were prevalent during the early part of the year, but the number of cases was considerably fewer than in 1904.

Our attention has been called to a number of nuisances, and without much difficulty they have been satisfactorily adjusted. The report of death certificates is now quite good. The report of birth certificates is not so satisfactory; yet better than in the past. I trust that in the near future the physicians of Carroll county will all see the importance of making up a complete record of births, as well as of deaths. There are only a few physicians who are negligent, and I hope soon to have them in line. And now last, but not least, in the list of dread diseases is small-pox. I desire to state that we have not had any cases of small-pox within our boundaries, of which fact we are very proud. Although it has prevailed on almost every side, yet it has not crossed our lines. We appreciate the fact that we are not immune to the disease, and, therefore, will not lessen our vigilance. We are willing to take up any measures to prevent an epidemic of small-pox in our county.

Very respectfully,

CHARLES R. FOUTZ, M. D., Health Officer.

CECIL COUNTY.

ELKTON, January 1, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Sir: Physicians have been reasonably prompt in returning birth cards, except Dr. Stump of Perryville, and Dr. Jenness of Rising Sun.

Births for the year as reported, 331; deaths, 378. Communicable diseases have been reported to me from over the county from May 1, 1904, to January 2, 1905, as follows, viz.: Typhoid fever, 19; diphtheria, 6; scarlatina, 4; measles, 20. No small-pox, but plenty of grippe. Five nuisances abated, and Perryville water plant greatly improved. From the reports coming in our county's health is good.

REPORT OF DEATHS AND CAUSES FOR CECIL COUNTY, MD., FROM
MAY 1, 1904, TO JANUARY 2, 1905, BY DISTRICTS.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	Total.	Col'd.
Consumption.....	5	4	11	1	5	....	7	....	....	33	12
Pneumonia.....	1	....	3	1	3	....	2	....	....	10	4
Broncho-pneumonia.....	....	....	1	....	....	....	....	....	....	1	....
Bronchitis.....	....	....	....	1	....	....	....	....	....	1	....
Pulmonary hypostasis.....	....	....	....	....	....	....	1	....	....	1	....
Heart disease.....	6	1	1	1	3	....	4	2	1	19	3
Apoplexy.....	....	....	2	1	2	....	1	1	2	9	1
Cerebral hemorrhage.....	....	....	....	....	....	2	....	....	....	2	....
Cerebral softening.....	....	....	....	....	....	....	1	....	....	1	....
Hemiplegia.....	....	1	1	....	....	....	....	....	....	2	....
Paralysis.....	....	1	....	1	....	5	3	....	....	10	2
Bright's disease.....	1	1	1	....	2	....	3	....	....	8	1
Nephritis.....	....	....	....	....	....	1	1	....	1	3	....
Diabetes.....	....	....	....	....	1	....	....	....	1	2	....
Cancer.....	1	....	3	1	....	4	....	....	3	*12	1
Cholera infantum.....	1	1	2	1	1	1	4	1	....	12	3
Ilio-colitis.....	....	....	....	....	....	1	....	....	....	1	....
Inflammation of bowels.....	....	....	....	....	....	1	....	....	....	1	....
Acute dysentery.....	....	....	....	....	....	1	....	....	....	1	....
Accident.....	1	....	7	....	1	1	....	1	....	†11	5
Stillborn.....	....	....	2	1	1	2	1	....	....	7	3
Inanition.....	1	....	2	....	1	....	2	....	....	6	1
Typhoid fever.....	....	2	....	....	1	1	1	....	....	5	1
Continued fever.....	1	....	....	....	....	....	....	....	....	1	....
Meningitis.....	1	1	1	....	....	1	....	....	....	4	2
Acute indigestion.....	....	....	2	....	....	....	1	....	....	3	....
Anterio-sclerosis.....	....	....	2	....	....	....	....	....	....	4	1
Whooping cough.....	1	....	....	2	....	1	1	....	....	5	2
Convulsions.....	....	....	1	....	....	....	3	....	....	4	1

MORTALITY OF CECIL COUNTY—Continued.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	Total.	Col'd.
Measles.....		1	1				1			3	2
Unnamed			2				4			6	2
Anemia.....					1					1	
Gangrene			1		1					2	1
Dentition.....	1						1			2	
Premature birth.....	1									1	
Infantile eclampsia		1								1	
Exposure	2									2	1
Hernia.....	1									1	1
Chronic gastric catarrh...	1									1	1
Asthma	1									1	
Infirmities of old age....			1			1	1			3	
General debility and opium habit.....					1	1				2	
Uramic eclampsia.....			1							1	
Alcoholism, arterio-sclerosis, cirrhosis, dropsy.....			1							1	
Puerperal fever	1							1		2	2
Rheumatism								1		1	1
Epilepsy						1				1	
Diphtheria	1									1	
Purpura hemorrhagica.....			1							1	
Stomach and liver disease.....							1			1	
Membr. laryngitis.....							1			1	
Hodgkin's disease	1									1	
	30	14	50	13	24	25	45	7	8	216	

* Of gastric, 5; uterus, 3; throat, 1.

† Gunshot wound, 1; burns, 2; fall, 1; drowned, 3; cars, 3; mill injury, 1.

Cecil Co., Population.			Rate.
24,662	Deaths from May 1, 1904, to Jan. 2, 1905.	216	8.10
	Deaths from Jan. 1, 1904, to May 1, 1904.	162	

Total deaths for the year..... 378 15.32

Elkton, 2,542	Total deaths for the year	34	13.37
Port Deposit, 1,575	Total deaths for the year	37	23.42

Respectfully submitted,

JOHN W. COOPER, JR., M. D., Health Officer.

CHARLES COUNTY.

WALDORF, MD., January 1, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Dear Sir: I submit my second annual report as Health Officer for Charles county. The health of this county since my

last report, one year ago, has been fairly good. Only a few cases of typhoid of a mild type have developed. Five cases of scarlet fever and six cases of diphtheria have been reported to this office during the year, but none of a fatal character. There was a case of small-pox reported from Indian Head in November last, in the person of Mrs. Andrew McNamara, a white woman, aged 25 years, who came from Pittsburg by way of Washington and Alexandria. Her case was quite a serious one, but resulted in complete recovery. All precautions were taken to prevent the spread of the disease and a strict quarantine established. On December 31, 1904, the house was thoroughly disinfected, bedding and furniture burned, and quarantine raised. I have been extremely careful in every case of an infectious nature to thoroughly fumigate the house. Vaccination has been general through the small-pox district, as well as over a large portion of the county.

I find it very difficult, owing to the small pay, to get correct returns of births and deaths. From experience I have noticed a large increase in consumption in this county during the past two years I have been Health officer of Charles county.

Very truly yours,

G. O. MONROE, M. D., Health Officer.

January 8, 1905.

DORCHESTER COUNTY.

CAMBRIDGE, MD, January 16, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health, Baltimore, Md.

Sir :—During the year 1904 I have recorded and reported the following deaths: White—166; colored—143. Total—309.

The chief causes of death were: White—Tuberculosis 10; typhoid fever, 7; pneumonia, 18. Colored—Tuberculosis, 27; typhoid fever, 16; pneumonia, 7.

During 1904 births have been reported as follows: White—428; Colored—143. Total—571.

The laws in regard to vital statistics is working well, and I am getting better returns each year.

The year 1904 has, as a whole, been one of the healthiest ever known, especially during the fall season. Our oldest physicians have reported that they have never known as little

general sickness. Throughout the county the decrease of typhoid fever has been marked, the only exceptions being the neighborhoods of Madison and Hurlock. The virulence of the disease among our negro population may be noted from the number of deaths recorded. This, of course, is undoubtedly due in large part to their lack of proper medical attendance and nursing, of personal and household cleanliness. Still, even allowing for these causes, the fact of its spread and fatal course in the negro race has been clearly established this year. One case of small pox has been reported. This was imported into Hurlock from New Jersey. The diagnosis was promptly made, the patient isolated and house quarantined. Under the skillful attention of Dr. G. Roger Myers, the patient recovered, and owing to his rigid enforcement of the regulations established by the Health Officer, no other cases occurred. A few cases of diphtheria have been reported, but the disease has in no instance assumed epidemic form. While I cannot take the position of some of my Eastern Shore brethren that malaria has disappeared from our side of the Bay, it is a pleasure to note the extremely marked decrease in the number of cases, and the mild form of those noted. As in my former reports I beg to acknowledge the cordial support and hearty assistance of the doctors of the county in all matters relating to the suppression of diseases and the bettering of health conditions generally.

Respectfully yours,

GUY STEELE, M. D., Health Officer.

FREDERICK COUNTY.

December 31, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Doctor: I have the honor herewith to submit my first annual report as health officer for Frederick county, Maryland. From December 1, 1903, to December 31, 1904, there has been reported three hundred and thirty births and five hundred and thirty-nine deaths.

The following is a list of cases reported during the year: Small-pox, 6; diphtheria, 70; typhoid fever, 40; scarlatina, 45;

varicella, 19; pertussis, 25. I have investigated quite a number reported typhoid fever cases. They seemed to me to be of a typho-malarial type. I attributed cause to miasmata generated along the Monocacy. I ordered wells and springs thoroughly cleansed, and advised use of boiled water where there was any doubt of purity. These cases were too isolated to be considered epidemic.

I have had quite a number of cases of diphtheria reported, had them isolated, furnished antitoxin, and kept up sulphur fumigation. As a result, a greater portion of these cases recovered, and spread of the infection speedily checked.

I have been called to several suspicious and aggravated cases of varicella in patients as much as seventeen years of age. So far have had no trouble in discriminating them from small-pox.

Our physicians have not been quite as diligent in fumigating as they might be, therefore I have done a great deal of it myself in private families and school houses.

Our vaccination is well attended to wherever it is possible to bring it about. Some of our people are still prejudiced against it.

I have a great many notices of nuisances, generally over the telephone, by people who don't want to be known, if possible to avoid it. Most of them were pollution of water courses by either throwing carrion into them or close by. As yet I have had no litigation in correcting the evil.

We have no small-pox house, ours having been destroyed by incendiary many years since.

Harry Metcalf, in the scabby stage of small-pox, by some means unknown to me, escaped from a pest house at Braddock, Pa., and came to his Frederick county home the latter part of December, 1903. I had the premises immediately quarantined, and after his death, seven or eight days later, everything in contact was thoroughly disinfected; but his attending physician, Dr. E. B. Stone, became infected and presented a well-developed attack of varioloid.

On the 2d of January, 1904, we found an outbreak of small-pox in the Rippeon family, already in the eruptive stage. Father and mother had been vaccinated, but not successfully. Three children under five years had not been vaccinated. It being impossible to isolate these children in their small house, with the thermic temperature below zero, Dr. D. E. Stone and

I deemed it unwise to vaccinate twelve days after contact. They were, however, vaccinated later. The father and two children died of confluent small-pox. The five-year old daughter recovered, with some marks of blood poison; the mother, who was enceinte at the time, had a mild attack of discrete type, recovered, and two months later gave birth to a healthy child. I made five trips to these cases, one in consultation as to diagnosis, and maintained strict quarantine. We had no further cases. Vaccination throughout the community has been well attended to.

Yours respectfully,

T. E. R. MILLER, M. D., Health Officer.

GARRETT COUNTY.

OAKLAND, MD., January 18, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Doctor: Below is a sketch of the health conditions of this county for the year 1904. First part of year we had quite a little smallpox (in Oakland and vicinity), a few deaths resulting therefrom. The following diseases have made their appearance in various sections of the country during the year. A number of cases of typhoid fever, diphtheria, scarlet fever, mumps, etc., have occurred throughout the county. At present none of these diseases prevail to my knowledge.

A number of nuisances have been reported and abated. I failed to mention above that three mild cases of small-pox occurred last month near Friendsville. They are now well, and no new cases reported. So far as I now know, there is but little sickness of any kind in the county, and I think I am justifiable in reporting our sanitary condition good.

Very respectfully,

W. H. RAVENSCROFT, M. D., Health Officer.

P. S.—I find it impossible to get most of our physicians to report births and deaths.

HARFORD COUNTY.

FOREST HILL, MD., January 2, 1905.

DR. JOHN S. FULTON,

*Secretary State Board of Health, 10 South Street,
Baltimore, Md.*

Dear Doctor: I herewith send you my report for the year 1904.

The general health for Harford county has been very good the past year, no epidemics.

Vital statistics were sent you monthly after carefully recording them. Births were not all reported, but deaths were.

Some few cases of typhoid fever, diphtheria, scarlet fever and mumps reported.

Two cases of confluent small-pox in Belair, of which one died. Neither had been vaccinated.

One case of discrete small-pox near Aberdeen. Vaccination scar very imperfect. No further spread of the disease.

School children very thoroughly vaccinated.

Respectfully yours,

F. P. SMITHSON, M. D., Health Officer.

HOWARD COUNTY.

ELLICOTT CITY, MD., June 25, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Sir: We have had no cases of small pox during the year 1904. There have been a good many cases of diphtheria in every section of the country, but of a non-epidemic type. Cases have occurred in one or two public institutions, but have been mild. The jail had several cases in the family of the jailer, but we succeeded in keeping it confined to the resident portion of the house, no prisoners being affected.

We had quite a number of cases in our town, and endeavored to have the town authorities remove a number of hog pens, but failed to get them to take action. I then ordered the Sheriff to have them removed, and after cleaning them all out not a single case of the disease occurred.

Typhoid fever existed in every section of the country and a number of deaths occurred. I had a number of specimens of water examined, but without being able to trace the disease to

that source. I think many of the cases due to the uncleanly condition of the dairies.

The usual number of cases of scarlet fever, measles and whooping-cough have been reported, but of a very mild type. Our country at this time is healthy except for pneumonia and la grippe, of which we have a good many cases.

Very respectfully,

THOMAS B. OWINGS, M. D., Health Officer.

KENT COUNTY.

CHESTERTOWN, MD., January 23, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

Dear Dr. Fulton: Pursuant to the custom of the local boards of health reporting annually to the State Board of Health the health and sanitary condition of the various counties, I herewith submit such report for Kent county, together with vital statistics for 1904.

During the incumbency of the present Health Officer the county has not been visited by an epidemic or endemic of any kind; sporadic cases have, however, been reported from various sections. The health of the county, so far as contagious and exanthematous diseases are concerned, was better last year than for a number of years previous.

Two schools were closed in the county for a short time on account of scarlet fever, and in both instances there was no spread of the disease beyond the original cases. There were several cases of scarlatina in Chestertown, but, fortunately, they occurred in families where complete isolation and thorough disinfection could be accomplished, and the malady was speedily stamped out.

One case of membranous croup was promptly reported in Chestertown, and the house as promptly fumigated, and no further developments occurred.

Typhoid fever and malarial fever were less prevalent during the past year. The majority of typhoid cases were at or near Locust Grove, and Dr. G. I. Barwick, who had charge of them, exhausted every means to get at the source of infection. The

local Health Officer visited the place with Dr. Barwick, and a thorough inspection of the premises was made, and samples of water from every source of supply, including ice gotten from a near-by mill pond, were sent to the State Chemist for analysis. A sample of drinking water was also sent from Fairlee, and a speedy reply as to the result of the analysis doubtless prevented further sickness.

Vaccination has been generally looked after, especially among school children, but the crusade in 1903, owing to the presence of small-pox, was so wide in its scope as to render especial attention to that branch of the service unnecessary. Several nuisances, such as neglected privies, dead animals, etc., were reported, and in each instance the matter was promptly rectified.

In conclusion, the Local Board of Health takes this opportunity to express its thanks to the State Board for its hearty co-operation during the past year.

Sincerely yours,

H. G. SIMPERS, M. D., Health Officer.

Causes of death.	Number of deaths in Chestertown.	And throughout Kent county.
Abscess of liver.....	..	1
Accidents.....	..	9
Asthma.....	..	5
Bright's disease.....	3	17
Bronchitis, capillary.....	1	2
Cancer.....	2	2
Catarrh.....	..	4
Chlorosis.....	1	1
Cirrhosis of liver.....	2	4
Colitis.....	..	3
Congestion of brain.....	1	1
Convulsions.....	1	10
Diphtheria.....	..	1
Dropsy.....	..	3
Dysentery.....	2	..
Epilepsy.....	..	1
Gastric ulcer.....	1	1
Heart diseases.....	8	22
Hemorrhage.....	..	7
Inflammation of liver.....	..	1
La Grippe.....	1	3
Locomotor Ataxia.....	..	1
Malarial fever.....	..	1
Marasmus.....	2	7

Causes of death.	Number of Deaths in Chestertown.	And throughout Kent county.
Membranous croup.....	1	..
Old age.....	3	15
Paralysis.....	..	17
Peritonitis.....	1	14
Perinicious Anemia.....	..	1
Pneumonia.....	14	19
Rheumatism.....	2	1
Septicemia.....	..	2
Softening of brain.....	1	..
Spinal meningitis.....	..	1
Still-born.....	4	23
Summer diarrhœa of children....	3	21
Suicide.....	..	1
Tuberculosis.....	10	37
Typhoid fever.....	1	7
Unknown (no doctor attending)...	..	11
Uremia.....	..	1
Whooping Cough.....	..	2
Total number of deaths...		335

Total number of deaths excluding still-births, 308. Average age at death, 36 and 6-10th years. Death rate per 1000 for Chestertown, 2 per cent. Death rate per 1000 for whole county, $1\frac{3}{4}$ per cent. Of the 47 deaths from tuberculosis, 28 were colored and 19 white. Death rate per 1000 from tuberculosis, $\frac{1}{4}$ of 1 per cent.

Diseases.	Number of Cases reported.	Number of deaths.
Diphtheria.....	3	1
Measles.....	3	..
Membranous croup.....	1	1
Scarlet fever.....	8	..
Typhoid fever.....	37	8
Whooping cough.....	1	2
Varicella.....	6	..

212 births were reported; of that number 129 were white, and 83 colored; 118 males and 94 females.

MONTGOMERY COUNTY.

KENSINGTON, December 1, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Dear Doctor: I submit herewith my report for the year ending October 31, 1904. There have been reported to me: Births, 470—white, 353; colored, 117. Deaths, 381—white 238; colored, 143.

When I was appointed Health Officer in October 1903, I found the physicians were very remiss in reporting births and deaths, only 221 births and 161 deaths having been reported to my predecessor for the preceding year. I think all deaths are reported to me, but the record for births is not yet accurate; however, we are improving.

I next took up the matter of vaccination in the public schools and found the law had never been enforced, also that there was considerable opposition, strange to say, more among teachers than patrons. We appointed a vaccine physician in each locality, and they report 1,635 school children vaccinated in the year ending October 31, 1904, and opposition has practically disappeared. We don't apprehend any trouble in the future.

The general health of the country has been excellent for the past twelve months, very few cases of typhoid and these were of a mild type.

Several epidemics of measles and a few cases of scarlet fever and diphtheria were reported—no spread. Nuisances were abated without recourse to law at Boyd and Linden. The nuisance in the old bed of Rock creek, near Garrett Park, is still in litigation. We hope to have it abated this winter.

I have had the hearty co-operation of the County Board of Health in every effort to protect the health of the people and to enforce existing laws.

Respectfully,

W. L. LEWIS, M. D., Health Officer.

PRINCE GEORGE'S COUNTY.

FORESTVILLE, December 1, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Sir: I beg leave to make the following report from May 15, 1904, to January 1, 1905:

Births and deaths reported and recorded: Births, white, 157; births, colored, 102—total, 259. Deaths, white, 136; deaths, colored, 145—total, 281.

Contagious diseases reported: Diphtheria, 15 cases; scarlet fever, 7 cases; chicken-pox, 30 cases; small-pox, 1 case; typhoid fever, 60 cases.

Veterinary report: Glanders, 5 cases.

Hygiene and sanitary visits, 5.

Respectfully submitted,

JOHN E. SANBURY, M. D., Health Officer.

QUEEN ANNE'S COUNTY.

CHURCH HILL, December 1, 1905.

DR. JOHN S. FULTON,

Secretary of State Board of Health.

Dear Doctor: In May, 1904, I was appointed Health Officer of Queen Anne's County, and I have the honor of submitting the following report:

Queen Anne is in its usual healthy condition. We have had no epidemics during my term of office. I have had reported to me the following diseases: Twenty-four cases of diphtheria, resulting in two deaths; two cases of scarlet fever, with no deaths following; two cases of membranous croup, resulting in one death; eleven cases of measles, with no death resulting therefrom; and six cases of typhoid fever, terminating in no deaths. The following is the report from the different districts of the county: Diphtheria—Centreville, three cases; Ruthsburg, twelve cases; Crumpton, nine cases; making a total of twenty-four. Scarlet fever—Sudlersville, two cases. Measles—Templeville, three cases; Church Hill, eight cases. Membranous croup—Ruthsburg, two cases. Typhoid fever—Church Hill, four cases; Sudlersville, two cases; making a total of six cases.

In all cases of diphtheria reported, the houses were quarantined and Antitoxine used at once, while all the houses were fumigated with formaldehyde, no new cases resulting therefrom.

The law requiring all children to be vaccinated before being admitted to the public schools has been carried out most satisfactorily in Queen Anne's county.

From May to December, I have recorded and reported to the State Board of Health, one hundred and seventy-one deaths, and one hundred and thirty births. I estimate that I have reported 95 per cent. of the deaths, as the sub-registrars are very attentive to their work. Of births, 65 per cent. would

be a fair estimate. Many of the physicians are very careless in this matter of reporting all births to this office; and there are many mid-wives who are guilty of the same neglect. I hope that there will be an improvement on the part of physicians and mid-wives during the coming year in reporting their births to this office, and that Queen Anne's will stand at the head of the list in her report.

Yours very truly,

W. G. COPPAGE, M. D., Health Officer.

SOMERSET COUNTY.

DR. T. JACOB SMITH, Princess Anne, Health Officer. No report.

ST. MARY'S COUNTY.

DR. F. F. GREENWELL, Leonardtown, Health Officer. No report.

TALBOT COUNTY.

DR. E. R. TRIPPE, Easton, Health Officer. No report.

WASHINGTON COUNTY.

HAGERSTOWN, MD., January 26, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Doctor: I have the honor herewith to submit my third annual report as Health Officer of Washington county.

BIRTHS.

	White.	Colored.	Total.
Male, ...	311	15	326
Female, ...	336	4	340
	647	19	666

DEATHS.

Class I—General Diseases.

Typhoid fever, 13; diphtheria, 3; septicaemia, 3;
 tuberculosis, 99; carcinoma, 21; cerebral tumor, 1;
 hemiplegia, 2; measles, 6; peritonitis, 8; suicide, 5;
 rheumatism, 7; appendicitis, 2. 170

Class II—*Diseases of Nervous System.*

Apoplexy, 13; cerebro-spinal meningitis, 3;
 dementia, 1; epilepsy, 2; insanity, 1; la grippe, 2;
 paralysis, 38; paresis, 2; spinal meningitis, 2; denti-
 tion, 3; alcoholism, 2; acute meningitis, 10; myeli-
 titis, 3. 83

Class III—*Diseases of Circulatory Apparatus.*

Hemorrhage, 4; endo-carditis, 2; organic disease
 of heart, 56; arterial sclerosis, 2; angina pectoris, 3;
 defective circulation, 1; dropsy, 4. 72

Class IV—*Diseases of Respiratory Apparatus.*

Asthma, 3; broncho-pneumonia, 11; congestion of
 lungs, 9; pneumonia, 68; bronchitis, 10; emphysema,
 1; pertussis, 3. 105

Class V.—*Diseases of Digestive Apparatus.*

Cholera-infantum, 15; convulsions, 20; dysentery, 2;
 chronic diarrhœa, 2; entero colitis, 4; gastro
 enteritis, 4; intestinal obstruction, 2; inanition,
 19; marasmus 12; acute indigestion, 8; jaundice,
 5; strangulated hernia, 2; acute diarrhœa, 2;
 chronic gastritis, 4; cirrhosis of liver, 1. 101

Class VI.—*Diseases of Genito-Urinary Apparatus.*

Bright's disease, 9; diabetes, 3; nephritis, 9; uræmia,
 5; pyonephrosis, 1; perinephric abscess, 1. 28

Class VII.—*Early Infancy.*

Premature birth, 9; still-born, 44. 53

Class VIII.—*Old Age.*

Old age, 21; senile debility, 20. 41

Class IX.—*Affections produced by External Causes.*

Asphyxia, 2; accidental traumatisms, 38. 40

Class X.—*Ill-defined Diseases.*

Unknown, 25; ill-defined, 20. 45

Total number of deaths 738

Contagious Diseases Reported.

Typhoid fever, 36; diphtheria, 53; scarlet fever,
 59; measles, 169; varicella, 20; mumps, 57;
 whooping cough, 9. 403

NOTES.

About one year ago we were visited by an outbreak of measles and whooping cough. These diseases were not confined to any particular section or town or county, but very generally disseminated, not a single school escaping this invasion. With the opening of our schools last fall came scarlet fever and later diphtheria.

The mildness of these cases has been one of the marked characteristics of this outbreak of scarlet fever. The onset very insidious, the throat symptoms not marked, and there being but little elevation of temperature in a large percentage of the cases, there was nothing left upon which to make a positive diagnosis save the eruption, and for these reasons cases were frequently found in our public schools not only in their incipency but fully developed.

Typhoid fever, we are glad to note, has been almost a stranger with us the past year, there being but thirty-six cases in the county and towns having a total population of over 45,000 people.

One of the growing evils of this county at the present time is its impure and contaminated milk supply.

Think for a moment of one of these gentry—the dispenser and purveyor of lacteal fluid—meeting you at your front door in the month of January, with the mercury at zero, handing you your morning supply of milk, and at the same time warning you “Not to make it too hot or it might sour.” It does seem to me that the time is ripe to make it “sour” for some of them.

C. R. SCHELLER, M.D., Health Officer.

WICOMICO COUNTY.

SALISBURY, MD., December 29, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

Dear Doctor: Please find below report for year 1904.

Deaths, 194; births, 136; scarlet fever, 63 cases, 1 death; typhoid fever, 102 cases, 12 deaths; chicken-pox, 17 cases; measles, 33 cases; mumps, 12 cases; small-pox, 9, 1 death.

Very respectfully,

C. R. TRUITT, M. D., Health Officer.

WORCESTER COUNTY.

SNOW HILL, January 17, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Dear Doctor : I herewith submit my report for Worcester county for 1904.

We have had an exceptionally healthy year, not having had any epidemic diseases, the principal mortality being due to phthisis and pneumonia with a few cases of typhoid fever, croup and diphtheria.

Respectfully submitted,

C. P. JONES, M. D., Health Officer.

List of County Health Officers.

Allegany	Dr. C. H. Brace.....	Cumberland.
Anne Arundel.....	Dr. H. R. Walton.....	Annapolis.
Baltimore County—		
1st District.....	Dr. C. L. Mattfeldt	Catonsville.
2d “	Dr. John E. Bolte.....	Tyler.
3d “	Dr. Henry A. Naylor.....	Pikesville.
4th “	Dr. Harry M. Slade.....	Reisterstown.
5th “	Dr. J. H. Drach.....	Butler.
6th “	Dr. Joseph S. Baldwin.....	Eklo.
7th “	Dr. Thomas Baldwin.....	White Hall.
8th “	Dr. T. Ross Payne.....	Corbett.
9th “	Dr. R. C. Massenburg.....	Towson.
10th “	Dr. Thomas Emory.....	Hess.
11th “	Dr. Chas. F. H. Gorsuch.....	Fork.
12th “	Dr. C. N. Athey.....	Highlandtown.
13th “	Dr. Frank H. Ruhl.....	Lansdowne.
14th “	Dr. Wm. D. Corse.....	Gardenville.
15th “	Dr. John W. Harrison.....	Middle River.
Calvert	Dr. I. N. King.....	Barstow.
Caroline	Dr. Enoch George.....	Denton.
Carroll	Dr. Charles R. Foutz.....	Westminster.
Cecil	Dr. J. W. Cooper, Jr.....	Elkton.
Charles	Dr. G. O. Monroe.....	Waldorf.
Dorchester	Dr. Guy Steele.....	Cambridge.
Garrett.....	Dr. J. C. Legge.....	Oakland.
Harford	Dr. F. P. Smithson	Forest Hill.
Howard	Dr. Thos. B. Owings.....	Ellicott City.
Kent	Dr. H. G. Simpers.....	Chestertown.
Montgomery.....	Dr. Wm. L. Lewis.....	Kensington.
Prince George's.....	Dr. John E. Sansbury.....	Forestville.
Queen Anne's.....	Dr. Wm. Coppage	Church Hill.
Somerset.....	Dr. T. Jacob Smith	Princess Anne.
St. Mary's.....	Dr. F. F. Greenwell.....	Leonardtown.
Talbot.....	Dr. E. R. Trippe.....	Easton.
Washington	Dr. C. R. Scheller.....	Hagerstown.
Wicomico.....	Dr. Chas. R. Truitt.....	Salisbury.
Worcester	Dr. C. P. Jones	Snow Hill.

Reports of Town Health Officers.

ABERDEEN.

DR. CHARLES R. KRIETE, Health Officer. No report.

ANNAPOLIS.

DEATHS BY MONTHS AND CAUSES.

	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.
Tuberculosis.....	4	2	1	2	5	5	3	1	1	..	1	6
Influenza.....	..	..	1	..	2	2	..	..	..	..	..	..
Puerperium.....	1	3	1	1	4	2	2	..	1	2	3	1
Dentition.....	..	..	..	..	..	..	1	3	..	..	..	1
Senility.....	..	..	1	..	1	..	..	..	..	..	..	..
Meningitis.....	2	..	..	..	1	1	1	1	..	..	..	..
Burns and Scalds.....	..	..	..	..	1	1	..	1	..	..	..	..
Capillary Bronchitis and Broncho-Pneumonia.	1	..	..	..	2	3	..	1	..	..	..	..
Pneumonia.....	..	..	1	1	2	..	2	..	..	..	..	..
Trismus Nascentium.....	1	..	..	..	1	..	1	..	..	..	..	1
Tetanus.....	..	..	..	..	..	..	..	..	..	..	..	..
Apoplexy (Cerebral) and Paralysis.....	2	2	..	1	1	..	1	1	1	..	2	..
Nephritis.....	4	1	1	..	1	..	2	..	3	..	..	..
Heart Disease.....	1	1	2	1	2	2	1	1	..	3	..	..
Gastro-Enteritis.....	2	..	..	1	..	1	..	..	..	3	3	..
Marasmus.....	4	5	1	1	..	1	1	1	4	6	1	..
Epilepsy.....	..	..	..	..	..	..	1	..	..	1	..	..
Typhoid Fever.....	..	..	..	..	..	..	1	..	1	..	..	..
Dysentery.....	..	..	..	..	..	..	..	1	..	1	..	..
Cholera Infantum.....	..	..	..	..	..	..	..	1	1	1	2	..
Accidental Violence.....	..	1	1	1	..	..	..	..	..	..	2	..
Peritonitis.....	..	..	..	..	..	..	..	..	..	..	1	..
Malignant Neoplasms.....	1	..	1	1	2	..	..	..	..	..	1	..
Accidental Drowning.....	1	..	..	..	..	..	..	2	..	..	..	..
Syphilis.....	..	1	..	..	..	..	..	1	..	..	..	..
Inflammation of Liver.....	..	1	..	..	..	..	..	..	..	..	..	..
Appendicitis.....	..	1	..	..	..	..	..	..	..	..	..	..
Leukemia.....	..	..	1	..	..	..	..	..	..	..	..	..
Ascites.....	..	1	..	..	..	..	..	..	..	..	..	..
Diabetes Mellitus.....	..	..	1	..	..	..	..	..	..	..	..	..
Chronic Anemia.....	..	..	..	..	..	..	..	1	..	..	..	..
Hanging.....	..	..	..	..	..	..	..	..	1	..	..	..
Suicide by Shooting.....	..	..	..	..	..	..	..	..	1	..	..	..
Total Number of Deaths.....	24	14	7	15	20	22	13	16	6	15	22	21

BIRTHS.

	WHITE.		COLORED.	
	Male.	Female.	Male.	Female.
September	8	5	9	4
October	8	5	10	3
November	3	7	4	6
December	6	3	1	3
January	4	5	8	7
February	7	1	8	7
March	5	4	9	9
April	0	10	9	13
May	5	4	5	2
June	5	4	4	7
July	5	4	8	6
August	7	17	12	12

Respectfully submitted,

LOUIS B. HENKEL, M. D.,
Health Officer for Annapolis.

BRUNSWICK.

BRUNSWICK, January 18, 1905.

DR. JOHN S FULTON,

*Secretary State Board of Health.**Deaths from all causes, by months, from January 1, 1904, to December 31, 1904.*

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Senile gangrene.....	1												1
Pneumonia.....	2	1	2		2						1		8
Defective circulation.....	1												1
Confinement.....		1											1
Tuberculosis.....		2	1	1			1						5
Convulsions.....								1					1
Premature birth.....		1	1										2
Bronchitis.....			1	2									3
Meningitis.....			1										1
Paralysis.....			1		1								2
Nephritis, chronic.....				1									1
Entero gastritis.....				1									1
Accident by cars.....						1		2			1		4
Marasmus.....							1	1	1				3
Myelitis.....							1						1
Entero colitis.....							1	1					2
Heart failure.....								1					1
Softening of the brain.....								1					1
Gastro intestinal catarrh.....								1					1
Apoplexia cerebral.....								1					1
Unspecified cause.....							1						1
Cardiac paralysis.....									1				1
Uterine cancer.....									1				1
Typhoid fever.....									2				2
Organic heart disease.....										1			1
Membranous croup.....											1		1
Dropsy.....												1	1
Still births.....												2	2
Deaths.....	4	5	7	3	5	1	4	9	6	1	2	4	51
Births from January 1, 1904, to December 31, 1904.....	12	12	9	8	8	7	11	14	12	8	9	11	122

*Infectious and Contagious Diseases from January 1, 1904, to
December 31, 1904.*

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Measles.....	1	1	..	..	..	2	..	1	5	..	..	..	10
Typhoid fever.....	1	3	..	..	..	..	..	1	..	..	1	2	8
Diphtheria	..	1	..	..	..	..	1	..	..	..	..	..	2
Membranous croup.....	..	..	..	..	..	..	..	..	..	..	1	..	1
	..	2	5	..	..	2	1	2	5	..	2	2	21

As regards the health of our city for the past year, the records show it to be in a healthy condition, which is, no doubt, due to the inspections made of the whole city, three or four times a year, by the health board. Our physicians have been very careful and prompt with their reports, and we are, therefore, able to give a very correct report upon vital statistics. Our population, estimated at 3,500 or more, shows an annual health rate per 1,000—14.57, or deduct four killed by cars and two still births, the death rate by disease is 12.85.

Our work has been very satisfactory, but yet improvement remains. The hog-pen question remains a deplorable one to handle, with no legislation in sight to abate the nuisance.

We have served a large number of notices through our police service, which has its effect on the public at large; the work is usually carried out promptly. We specify from three to five days' grace to abate any nuisance, and rarely a second notice is required, but the law is applied when no result is obtained.

We issue burial permits for all deaths. All cases of contagious and infectious diseases are reported to the health board, and every precaution necessary to protect the public by quarantining all cases of diphtheria and scarlet fever; no scarlet fever during the past year, one case of membranous croup. Ninety children were vaccinated in the public schools by Dr. A. G. Horine, vaccine physician.

We had a mild epidemic of chicken pox during the fall and winter months, none reported owing, I presume, that they did not require medical attention.

We remain yours very respectfully,

A. G. HORINE, M. D.,
Health Officer.

SILAS M. HOOVER, Secretary.

W. G. BARNARD, Recorder.

CAMBRIDGE.

DR. R. E. WOLFF, Health Officer. No report.

CUMBERLAND.

Dr. C. H. BRACE, Health Officer. This report may be found under Allegany county.

FREDERICK CITY.

FREDERICK, MD., January 16, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Dear Doctor: In making this my annual report of the health of Frederick city for 1904, would say our city has enjoyed excellent health as usual. But it is not to be wondered at when you take into consideration our pure mountain water and air. We don't know what it is to have an epidemic of any kind—some little typhoid fever and diphtheria—but very few deaths. The laws of hygiene are strictly observed. The attending physicians have quarantined their patients in the few cases of contagious cases reported, thus preventing the further spread of the disease. In fact, our physicians to a man have done all in their power to prevent contagious diseases spreading, hence the good result.

Respectfully,

S. F. THOMAS, M. D., Health Officer.

FROSTBURG.

DR. J. MARSHALL PRICE, Health Officer. No report.

HAVRE DE GRACE.

DR. I. J. WOODWARD, Health Officer. No report.

KENSINGTON.

DR. W. M. L. LEWIS, Health Officer. See Montgomery county.

LONACONING.

LONACONING, MD., January 16, 1905.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Doctor: I have the honor to hand you herewith the report of the Lonaconing Board of Health for the year ending December 31, 1904.

There have been reported 140 cases measles, 57 mumps, 42 scarlet fever, 14 diphtheria, 9 typhoid fever.

There have been 60 deaths from causes as follows: 10 bronchitis, 9 la grippe, 6 prematurity and marasmus, 4 each measles, typhoid fever, pneumonia and apoplexy, 3 each tuberculosis, cancer, brights disease and cholera infantum, 2 accident, 1 each cerebro spinal meningitis, senile debility, erysipelas, rheumatism and noma.

Eighteen of these deaths were of persons over 60 years old, or of an average age of 72 years.

There have been 183 children born during the year, 99 males and 84 females—all white.

Inspection of the various nuisances coming to the knowledge of the Health Board have been made, and abated.

The health of the community has been good for the past 6 months and continued good at the present time.

Respectfully,

J. O. BULLOCK, Secretary.

OLNEY.

OLNEY, MD., December 1, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health.

Dear Doctor: During the past year ending October 31, 1904, there has been reported in our district, consisting of about

3,300 inhabitants, 83 births and 67 deaths. The causes of death were as follow: viz., tuberculosis, 14; pneumonia, 15; nephritis, 4; cancer, 6; paralysis, 6; peritonitis, 1; still-born, 4; dentition and convulsions, 2; heart disease, 2; Old age, 3; abscess of liver, 1; abscess of brain, 1; inanition, 3; cerebral softning, 1; erysipelas, 1; inflammation of brain, 1; cholera infantum, 1; cerebro spinal meningitis, 1.

The epidemic of scarlet fever reported last year ended with about 50 cases in all. The apartments occupied were fumigated and disinfected by a powerful formaldehyde gas generator, and as there have been no cases since, it is evidence that this is the most efficient means of stamping out this dreaded disease. We have also had an epidemic of German measles, of a mild type. Rabies made its appearance among dogs, but no person contracted it. There have been some cases of typhoid fever, but no deaths. Tuberculosis, as you see, claims many in our death list. I have fumigated and disinfected the apartments of those who have died with the disease, where it was very malignant, defraying the expense myself, because I believed it would check the spread of this disease, the greatest and most insidious enemy of the human race. We are now commencing in a methodical way to respond to the beneficent laws bearing upon the subject. It should be a cause of great congratulation that at last the State of Maryland is going to grapple with, and institute a crusade against, tuberculosis, which claims about 2,500 of its citizens by death every year, and over 10,000 infected. It will strongly appeal to every conscientious citizen and practitioner of medicine in the State, to act in harmony with the laws to prevent its spread. The State protects the citizens as well as the physician by keeping out charlatans, the physician especially in return, should show a spirit of altruism, by enforcing the laws which will surely stamp out in a degree this great "white plague."

Yours truly,

CHAS. FARQUHAR, M. D. Health Officer.

LAUREL.

DR. T. WATTS BYERLY, Health Officer. No report.

List of Town Health Officers.

Aberdeen.....	Dr. Chas. H. Kriete.
Annapolis.....	Dr. Louis B. Henkel.
Brunswick.....	Dr. A. G. Horine.
Cambridge	Dr. E. E. Wolff.
Cumberland.....	Dr. Chas. H. Brace.
Frederick	Dr. S. F. Thomas.
Frostburg.....	Dr. J. Marshall Price.
Havre de Grace.....	Dr. I. J. Woodward.
Kensington	Dr. Wm. L. Lewis.
Olney	Dr. Chas. Farquhar.
Lonaconing.....	Dr. Jas. O. Bullock.
Laurel.....	Dr. T. Watts Byerly.
Pocomoke City.....	Dr. H. N. Willis.

Reports of Sanitary Inspections — 1904.

WATER SUPPLY OF HAVRE DE GRACE.

BALTIMORE, May 21, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

SIR: I have the honor to report that in accordance with your instructions I examined the water supply of Havre de Grace on May 20th, to determine the existence of an alleged nuisance at that place, viz.: the pollution of the water supply by fish offal.

The conditions as determined by the Health Officer, Dr. Woodward, appear to be as follows:

During the fishing season large numbers of fish are caught in seines placed in position by means of steam launches and secured by floats. The nets are drawn up on a large floating platform by a steam winch, the fish split open and cleaned on the float, and the refuse thrown into the water. The fish, with head and tail removed, are placed in receptacles for the purpose. The refuse and offal cast into the water sinks to the bottom until decomposition occurs, when it floats upon the surface until disintegrated and the gases of decomposition discharged, when it again slowly settles to the bottom. This is said occasionally to impart an unpleasant taste to the water, and at times when large quantities are drawn in tubs or other receptacles an unpleasant odor is observed.

Verbal complaint has been made by Dr. Woodward to the fisheries and packing houses of the pollution of the water supply, and a request has been made that the refuse matter be sold to fertilizing factories to be made up into fertilizer. This has been refused by the companies and individuals concerned, on the ground that it would not be profitable to dispose of the refuse matter in this way. Certain of the owners of packing plants have threatened to move their packing sheds three miles above town if any proceedings were instituted, on the alleged ground that no pollution could be proven after the water had flown three miles.

Upon examination of the water supply the following conditions were found: The water supply for the town is derived from the Susquehanna river about opposite the middle of the town. The intake of the supply is through an iron pipe at the bottom of the river, about 50 feet from the shore and about twenty feet beyond a pier projecting into the water. The water flows by gravity into a brick and cement well, about ten feet in diameter, from which it is pumped into the city mains.

During the resting hours the water stands at the level of the river, but during the middle of the day when the pump is working the level of the water in the well is lowered several feet, and there is a moderately strong flow of water from the river into the intake pipe.

The first of the packing plants is about two hundred yards up stream from the intake, and consists of a large shed containing a number of vats in which the fish are salted down. A number of dead fish were floating in the water about this plant, and other materials, apparently refuse, lay on the bottom. At the pier, further down the stream along which the intake runs, three dead fish were floating in the water.

Three samples of water were taken from the pump house to obtain their gross appearance. Dr. Woodward stated that a recent high tide and heavy rains had washed down the larger part of the impurities on the river bottom, and the condition of the water was consequently much improved.

The samples drawn from the pumphouse taps and well appeared transparent, with a slight sediment and free from odor. One sample was drawn from the intake, one from a spigot connected with the city supply, and one from the well. To obtain the last sample the bottom of the well was dredged by means of a wooden bucket. The sediment from this sample consisted largely of sand. As no gross impurities were noted the sample was rejected, no taste or odor was apparent.

The presence of dead fish and offal in the river in the amount noted appeared sufficient to constitute a nuisance against the people of Havre de Grace for the following reasons:

1. The pollution noted is unnecessary.
2. It is offensive to the people of Havre de Grace.
3. The presence of considerable amounts of decomposing animal matter in the river may not only be directly

injurious to the public health, but any accidental contamination is thereby rendered much more serious.

Chapter 6 of Article 27 of the Revised Code of 1886 appears to fully cover the grounds upon which the people of Havre de Grace seek relief.

Very respectfully, your obedient servant,

MARSHALL LANGTON PRICE, M.D.,

Medical Assistant.

WATER SUPPLY OF ANNAPOLIS.

BALTIMORE, June 17, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Sir: I have the honor to report that in accordance with your instructions, I inspected the city water supply of Annapolis, on June 2. The water had been previously examined chemically and found good. A small amount of chlorides and a trace of free ammonia had been discovered in the small or old reservoir, and the water from this reservoir had been pronounced suspicious.

The water supply for the town is derived from three small streams about four miles west of Annapolis.

The system consists of three small streams, two large impounding dams, a pumping engine, and two reservoirs.

The impounding dams are supplied by three small streams, which together furnish a volume of water barely sufficient for the use of the city. The pumps lower the level of the impounded water several inches during the day. The level is regained slowly during the night.

The main supply comes from the north-east and enters the upper pond with a good flow. Further up the stream spreads partly over the marshy bottom and connects during high water and rains with several stagnant pools containing rank vegetation. A number of these have been filled and drained as they contained algæ, and imparted a taste like rotting wood to the water. It is the intention to gradually fill all of the marshy area and leave only a narrow channel through which the water may flow freely. The main supply runs about five miles, and is said to be free from human contamination along its source,

though it cannot be wholly protected from cattle. The width of the marshy bottom between the banks is about 300 yards. Arrangements are made to divert all the supplies during a rain so as avoid dirt and other contaminating materials washed down into the stream. The remainder of the supply comes from the junction of two small streams which enter the lower impounding space from the East. This bottom land is also marshy and contains at times rank vegetation, though both streams flow in narrow channels. The smaller stream has its origin in a spring arising from the bank a short distance south-east. The water in both impounding places was clear, and contained only a moderate amount of aquatic vegetation. The value of both ponds for subsidence purposes is largely lost by the fact that the pond and pumping-well supply flow in the same pipe, and that the pump draws water directly from the bottom of the pond. On this account the city water is practically always more or less turbid and deposits a sediment in standing.

Water is pumped from the pumping well to two reservoirs, a smaller reservoir originally the only one in use and a larger reservoir lately constructed.

Both reservoirs are constructed of stone, with a good cement bottom, the banks are grass. Access to the reservoir is had by a flight of steps. Both are enclosed by a wire and post fence.

The old reservoir is elevated somewhat above the new, to which it is connected by a pipe, so that the new reservoir may be filled by pumping water into the old. The elevation above the town of Annapolis is sufficient to give a pressure averaging about thirty pounds in the fire plugs in the town, and sufficient to elevate water to any height in the buildings.

Water is supplied to the city by two separate pipes, and on account of this arrangement and separate reservoir and pumping system, the supply can be temporarily cut off in either system for the purposes of repair, etc.

Six samples were collected for bacteriological analysis, as follows :

- No. 1. From large reservoir (new.)
- No. 2. From small reservoir (old.)
- No. 3. From pumping well.
- No. 4. From small stream (south-east supply.)

No. 5. From small stream (east supply.)

No. 6. From main stream (north-east supply.)

No. 7. From city tap (Maryland ave.)

The place of collection of the samples is marked on accompanying sketch map (B, 1, 2, 3, 4, 5, etc.)

All of the samples were collected after a heavy rain, and contained the suspended and dissolved materials washed in from the pastures and pools along the water courses. All of the water from the streams is diverted from the impounding spaces during a rain and after, as long as gross impurities remain.

All of the specimens examined were free from odour or taste.

Those from the reservoirs and pumping well were clear and transparent. Those from the streams slightly turbid and contain a light sediment in suspension washed down by the rain during collection.

The three samples from the streams contained the bacillus coli communis and an excess of aerobic organisms and were pronounced bad by the State Bacteriologist. A tabular statement is given following. All were previously pronounced good by the State Chemist.

A tabular statement of the chemical composition of six samples taken from the city supply is also sub-joined. All of the specimens conformed to a practical standard of purity in their chemical composition.

CONCLUSIONS.

1. The presence of the colon bacillus in the three running streams and its absence from the pumping well, both reservoirs and the city tap, indicates a pollution with surface impurities washed in by rain and a probable absence of pollution under ordinary condition.

2. It is improbable from the situation of the streams and their surroundings and from the fact of the absence of colon bacillus from the reservoirs and pumping well under ordinary conditions—that the contamination is from the sub-soil about the springs and streams which would become most manifest in dry weather.

3. The east supply is known to be contaminated by cattle.

4. For these reasons it is probable that the contamination of the water is not due to human sewage.

5. The presence of sewage, either human or animal, even temporarily in a water supply, is disgusting and dangerous.

RECOMMENDATIONS.

The following is respectfully recommended :

1. The filling of the marshy land and the narrowing of the channel to produce a narrow quickly flowing stream should be hastened as quickly as possible.

2. Contiguous pools stagnant and liable to contamination, which discharge into the supply streams during rainy weather should be filled or drained.

3. The impounding spaces should be emptied and cleaned of their debris and aquatic plants four times annually instead of twice annually as is now done.

4. The reservoirs should be drained and cleaned twice annually.

5. The names of persons polluting the streams along their course should be obtained and such persons compelled to cease all such pollution.

6. A second examination should be made of the supply about the middle of August when the sub-soil water is low.

Respectfully submitted,

MARSHALL LANGTON PRICE, Medical Assistant.

CHEMICAL EXAMINATION OF WATER FROM ANNAPOLIS WATER SUPPLY.

DRAWN BY DR. M. L. PRICE.

CONSTITUENTS.	Figures in Parts Per Million.					
	Running Stream, East Supply.	Running Stream, Northeast Supply.	Impounding Dam A.	Impounding Dam B.	Large Reservoir.	Small Reservoir.
Color.....	None.	None.	None.	None.	None.	None.
Odor.....	None.	None.	None.	None.	None.	None.
Reaction.....	Neutral.	Neutral.	Neutral.	Neutral.	Neutral.	Neutral.
1. Total Residue at 230° F.....	52	68	28	52	52	62
2. Ignited Residue.....	.....	.....	.....	.....	.....	.....
3. Volatile Residue.....	2.8	2.6	3	3	3.6	6
4. Amount of Chlorine.....	0.07	0.07	0.02	Trace.	0.02	Trace.
5. " Nitrogen as Free Ammonia.....	0.06	0.09	0.10	0.6	0.06	0.12
6. " " Albumenoid Ammonia.....	.....	.....	.....	Trace.	Trace.	Trace.
7. " " Nitrates.....	None.	None.	None.	None.	None.	None.
8. " " Nitrites.....	.....	.....	.....	.....	.....	.....
9. " " Earthy basis calculated.....	.....	.....	.....	.....	.....	.....
10. " " Sulphates calculated as SO ₃	Good.	Good.	Good.	Good.	Good.	Suspicious.
11. Character of Water.....	.....	.....	.....	.....	.....	.....

Good drinking water should be clear and colorless, without odor and neutral in reaction.

1. The "Total Residue" should not exceed 500 parts per million.
2. The "Ignited Residue" may constitute the total residue.
3. The smaller the amount of "Volatile Residue," the better.
4. The amount of "Chlorine" should not exceed 6.00 parts per million.
5. The amount of "Nitrogen as Free Ammonia," should not exceed .05 parts per million.
6. The amount of "Nitrogen as Albumenoid Ammonia" should not exceed .15 parts per million.
7. The amount of "Nitrogen as Nitrates" should not exceed 5.00 parts per million.
8. There should be no "Nitrites" present, as they indicate active decomposition of organic matter.
9. The amount of "Earthy Bases" should not exceed 200.00 parts per million.
10. The amount of "Sulphates" should not exceed 100.00 parts per million.

Analysis Authorized.

JOHN S. FULTON,

*Secretary of the State Board of Health
of Maryland.*

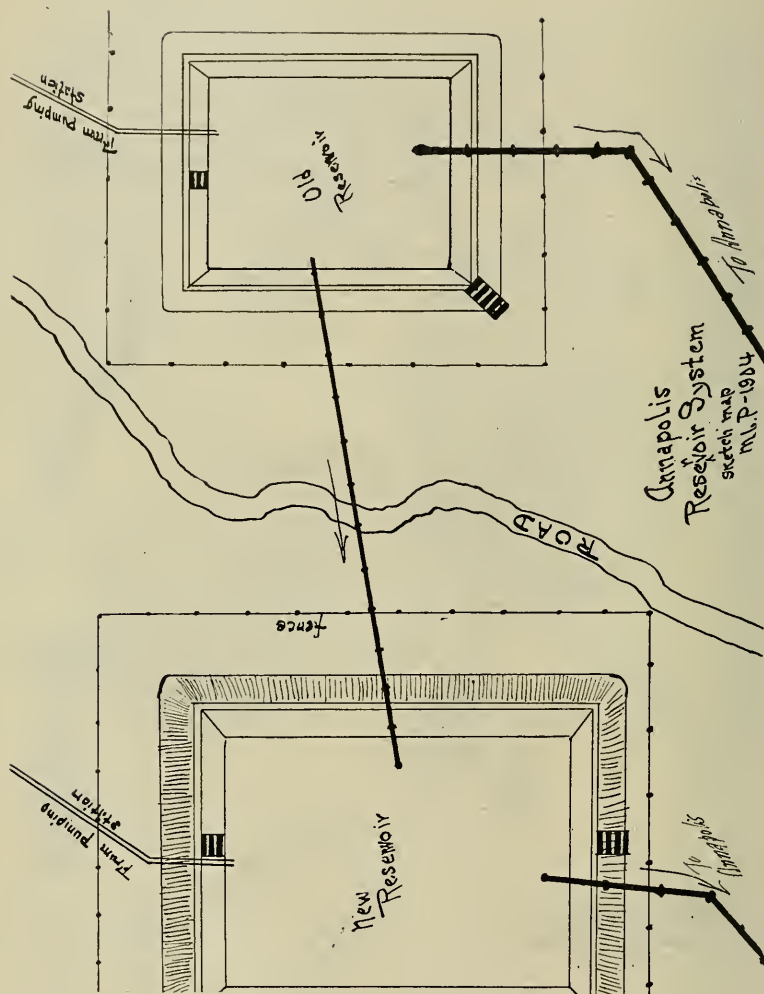
W. B. D. PENNIMAN,

Analyst State Board of Health.

ANNAPOLIS CITY WATER SUPPLY.

'BACTERIOLOGICAL EXAMINATION.

	1. Annapolis. Large reservoir. New.	2. Small reservoir. Old.	3. Pumping well.	4. Small stream. Southeast supply.	5. Small stream. East supply.	6. Main stream. Northeast supply.	7. City tap.
Bacteria per c. c.							
Aerobic.....	45	72	120	4800	6000	6000	120
Anaerobic.....	24	20	2	180	300	1500	5
Colon bacillus..	Absent 1-50 c. c.	Absent 1-50 c. c.	Absent 1-50 c. c.	Atypical present 1-50 c. c.	Present 1 c. c.	Present 1 c. c.	Absent 1-50 c. c.
Character of water	Good	Good	Good	Bad	Bad	Bad	Good



TYPHOID EPIDEMIC AT MT. SAVAGE.

BALTIMORE, August 17, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

Sir: I have the honor to report that pursuant to your instructions I left Baltimore August 11th to investigate an epidemic of typhoid fever then existing, and still existant, in the town of Mt. Savage, in Allegany county.

A series of inspections were made of the town, particularly of the water supply, drainage and earth closets for the disposal of excrementitious matter. The conditions found are considered at some length in the body of the report. Conferences were held with the county Health Officer, the officers of the Union Mining Company and the local physicians. The regulations and recommendations proposed and adopted by them are all included in this report, together with certain additional recommendations and conclusions.

Too much credit cannot be given to the Board of Health for the prompt action taken in suppressing the epidemic, and to Dr. Murray and Dr. Quarles for their care of the sick, and the active measures by which they have endeavored to prevent the further spread of the disease. Dr. Murray by his prompt destruction of a badly polluted spring undoubtedly saved the community from much sickness and the loss of several lives.

THE EPIDEMIC.

On July 4th, Mrs. Turner,—who occupied a small house about 100 yards above the brick-yard on a rather steep incline forming the north side of the smaller branch of Jennings Run,—and who had just returned from nursing her brother at Luke, Md., was taken ill. The latter probably contracted his disease at Piedmont, W. Va. Mrs. Turner's infection was evidently contracted either at the same place or from her brother, as she was taken sick as soon as she returned.

All of the drainage from this house was conveyed through a four or six inch iron pipe which emerged from the ground and ends about ten or twenty yards below on the side of the hill. This mixed drainage found its way down the hill, a small por-

tion of it reaching an open drain. A road runs along side the open drain over a bank of fire clay above the brick-yard. At the bottom of the fire clay bank a short distance from the open drain was a large flowing spring which furnished an abundant supply of clear water of pleasant taste and appearance and agreeable coolness.

The water was drunk by all the brick-yard employes, about 200 in number. Immediately below the brick-yard was the roundhouse and railroad shops where about 125 men were employed. All of these men drank artesian water.

During the early part of July heavy rains occurred, washing surface impurities down the side of the mountain upon which the Turner cottage was located and into Jennings Run and the spring below.

On July 11th, about one week after Mrs. Turner's arrival, 20 workmen from the brick-yard reported to the company doctor, (Dr. Murray) complaining of headache, backache, lassitude and digestive disorders. The strict limitation of these cases to the brick-yard employes and the similarity of their symptoms suggested to Dr. Murry a common source of infection. And the following day, July 12th, Dr. Murray posted a notice on the spring declaring the water bad and directing the discontinuance of its use. Five additional men reported on this day with typhoidform prodromata. From the railroad and other shops supplied by artesian water no cases appeared.

The brickyard men again were enjoined against the use of the spring water, but a certain number continued to use it during the succeeding 12 or 13 days.

Additional cases were now appearing at the rate of 5 or 6 daily, and some of the original cases were showing unmistakable evidences of enteric fever.

On July 25th, Dr. Murray effectually prevented the further use of the water by the destruction of the spring. Mineral ashes and fire clay were thrown into the spring until the latter was covered for several feet.

The chemical and bacteriological reports of water samples drawn by Dr. Murray and the report returned by this time, indicated a bad pollution of the brick-yard spring, and the pollution of a number of other wells and springs to a greater or less degree.

Cases of typhoid fever continued to develop after the destruction of the spring until August 10th (the day before my arrival), and sixteen days after the last of the brick-yard spring water was drunk.

The blood from three of these cases taken at opposite parts of the town gave a positive Widal reaction in all.

Two deaths occurred among the brickyard employees, one the foreman of the yard and the other a laborer.

The cause of death in one case was intestinal perforation with subsequent peritonitis, in the other case the cause of death appeared to be a general typhoid septicemia.

SPORADIC CASES.

The occurrence of sporadic cases was not remarkable in view of the then existing conditions later to be described. These were however few and so strictly localized as to give rise to no confusion in the investigation of the epidemic proper.

1. *Mont family.*

Preceding the general epidemic outbreak by four days, an interesting house epidemic occurred in the Mont family. The outbreak affected four members of the family. The origin is uncertain, but it was entirely restricted to the Mont family, no other cases resulting from it.

Mary Mont, the daughter of the family, was taken sick June 30th, and was nursed in her own home. Ten days later (July 10th) the father of the family was taken sick. His son, the brother of Mary Mont, became sick July 15th. The mother of the family was taken down July 25th.

These cases ran their course without damage to their neighbors.

The occurrence of house epidemics among the Union Mining Company's laborers is favored by the general lack of household furnishing which makes it necessary for one utensil or set of utensils to serve a whole family. One dipper is used in the majority of families for drinking purposes, water being taken from a common bucket.

2. *Deffenbaugh boys.*

These boys represent the only cases yet reported from the shops below the brick-yards. The 125 men employed in the

shops have an artesian water supply, and with this exception there have been no cases among them. Apparently the Deffenbaugh boys did not drink any water from the brick-yard spring, although they drank water from other springs, some of which showed sewage contamination. A number of half grown boys play in the bed of Jennings Run, which always contains gross sewage and receives the surface drainage of the town. No connection has been traced between these cases and the epidemic proper, nor any of the other sporadic cases.

3. *Goetz baby.*

This case occurred in a nursing infant, in the part of town known as Old Row. The father worked in the brick-yard, but did not contract typhoid fever, having had an attack about two years previously. The father prepared some of the child's milk, and it is possible that the baby contracted the disease in this way.

EPIDEMIC RESULTS.

The results of the epidemic to date are as follows :

Total number of cases, 115. Bed cases, 80. "Walking" cases, 35. Deaths, 3. Of these there remain: Sick, 40. Convalescent, 72.

The death of two or three others is hourly expected. While no new cases of frank typhoid have developed since August 10th, there are a number of suspicious cases now under observation.

SITUATION OF MT. SAVAGE.

The town of Mt. Savage lies in the Appalachian Mountains, about ten miles west of Cumberland. The shops, yards and offices of the Union Mining Company and the railroad lie in the valley, while the tenements ascend the abrupt sides of the mountain. The two branches of Jennings Run unite in the valley, and empty about five miles below the town into Mills Creek (?). The latter empties into the north branch of the Potomac river. The drainage of the mines above empty into Jennings Run and Mills Creek. The water contains iron salts, calcium sulphate and carbonate, and a considerable quantity of sulphur, and is fortunately quite unfit for human consumption.

The ascent from all three arms of Jennings Run is extremely steep. The elevation of the town is about 1,200 feet. The

Great Savage Mountain forms the north side of the valley; Pans Mountain lies to the south. Their elevation averages about 2,500 feet.

Mt. Savage and the surrounding country lie over a carboniferous stratum, consisting, in addition to the coal veins, of shale and limestone. The soil is a gravelly loam, abundantly wooded. The limestone strata approach the surface in the valley and an abundant out-cropping of springs results.

The tenements, boarding-houses, and cottages of the employees, rise along the side of the mountains to an elevation of several hundred feet.

The employees live largely in tenement houses or rows, the largest of which "Old Row" accommodates some three hundred to six hundred people.

THE WATER SUPPLY OF MOUNT SAVAGE.

The water supply is derived from the following sources: Three artesian wells, about 15 springs, and water from Dutch Hollow Creek, and one or two sub-soil wells.

1. Water supplied by: (a) Artesian well. (b) Water piped from Dutch Hollow Creek (G).

2. Artesian well and water-tank in brickyard.

3. Biay's spring (B). Geary's spring (G). Emptying into a brick and tile tank.

4. Workman spring. Heiss spring. Foundry Row spring (1). Foundry Row spring (2). Three springs on Trimble Hill. Supplying Foundry Row and vicinity of Trimble Hill.

5. Cistern and spring near round house and shops.

6. Three springs on Mulligan property supplying New Row and vicinity through cistern. Piped into some of the houses. (B—From water tap).

7. Artesian well. Old Row spring. Supplying Old Row.

8. Sub-soil well near railroad shops.

9. Individual springs. Pitzer's spring (B). Brook's spring (G).

All of these sources previously examined are marked (G)—good, or (B)—bad, as the case may be. A complete tabulated statement is reserved until all of the water used for drinking purposes can be examined.

All of the waters marked B contain the colon bacillus. The majority also contain chlorides in excess, an undue proportion of free and albumenoid ammonia and several samples contain nitrites. All of the artesian well water is good.

DISPOSAL OF WASTE AND EXCREMENTITIOUS MATTERS.

The natural drainage of the town is remarkably perfect. Few artificial arrangements are necessary. The steep gradient and frequent rains fulfill all ordinary and extraordinary requirements. All surface pollutions are washed into Jennings Run during the heavy rains.

The system of earth closets is the only means of disposing of excrementitious matters. These closets are dug in the usual way and when filled the superstructure is moved over a newly dug trench. Very few are regularly cleaned. After a rain all these closets are flooded and after becoming filled to a certain degree no other measures are required as any further excess is washed into the stream. The closets are apparently so built as to facilitate this process; none are tightly closed, and give free access to air and flies. The bed of Jennings Run contains gross human sewage at all times in addition to a miscellaneous collection of offal, dead animals and refuse.

The odor during the day is unusually offensive and continues so until a heavy rain flushes the Run when all refuse is carried down and emptied into Wills Creek and thence into the Potomac.

The presence of these open earth closets constitute a system in no whit superior to the latrines of certain of the military camps during the Spanish-American War of 1898. It was pointed out to the medical authorities of Mt. Savage that the presence of open trenches of this character during the fly season gave rise to a danger of a secondary epidemic appearing about two weeks or more later, in which the water supply would play a subsidiary part, the main means being an intermediary insect, particularly the fly, which played the leading role in the considerable epidemics at Camp Alger and Camp Thomas, Chattanooga, and other military camps in 1898.

PROTECTIVE MEASURES TAKEN.

The County Board of Health has co-operated, through its secretary, Dr. Brace, with the medical officers of the Union Mining Company, in the adoption of general measures of pro-

phylaxis. The following notice was printed and posted in conspicuous places about the town :

NOTICE—Owing to a severe epidemic of TYPHOID, everybody is required to boil all drinking water and to police all front yards, back yards, privies, pig-pens, etc.

Sprinkle lime freely around.

These precautions are absolutely necessary to prevent the spread of the disease, which is assuming alarming proportions.

COUNTY BOARD OF HEALTH.

Every effort has been made by all the physicians to prevent the use of water for drinking purposes without previous boiling. Practical housekeeping difficulties stand in the way of a complete observance of this precaution in many of the houses, and verbal warnings have not been completely effective in preventing the use of unboiled water from some of the contaminated springs.

PREVENTIVE MEASURES RECOMMENDED.

At a conference held with the officials of the Union Mining Company, C. & P. Railroad, and the President and Secretary of the County Board of Health, the following additional precautions were recommended in regard to the management of the water supply :

1. It was recommended that in addition to the posting of notices on springs which contained the Bacilli Coli Communis that such springs be sealed by means of a suitable superstructure, and that notices be posted thereon forbidding any interference with the seals placed upon them on pain of fine or imprisonment.

2. Any spring which it was impracticable to seal on account of mechanical difficulties to be rendered unfit for drinking purposes by the use of a harmless emetic, such as copper sulphate or alum. Similar notices being posted upon the springs also. The text of the notice to be similar to the following :

NOTICE—This spring (or well) has been sealed by order of the Board of Health for Allegany county.

All persons are forbidden to molest the seal or covering placed on this spring on pain of fine or imprisonment.

CHARLES H. BRACE, M. D., Secretary.

At the request of the secretary a conference was held with the Board of Health and a plan of prophylaxis devised to follow three main lines :

1. The closure of all infected springs to be made effectual.
2. Covering the contents of all privies with a sufficient layer of earth, ashes, or lime.
3. Personal and domestic prophylaxis in the houses of the patients.

REGULATIONS.

OFFICE OF THE BOARD OF HEALTH OF ALLEGANY COUNTY.

MT. SAVAGE, MD., Aug. 1904.

NOTICE—Owing to the presence of an epidemic of typhoid fever in the town of Mount Savage, the following regulations will be rigidly enforced :

1. Any person breaking open any well or spring sealed by the County Board of Health, or breaking any seal placed upon any pump, spring or well, or other water supply, or moving or destroying any of the printed notices posted by the County Board of Health, shall be prosecuted, and if convicted, will be dealt with according to law.

2. No person shall throw any stool or urine upon the ground under any circumstances, or into any drain, ditch, privy or latrine, until the same shall have been properly disinfected.

3. No stool or urine shall be kept in any premises in the town of Mount Savage unless the same shall be suitably covered.

4. All persons using earth closets, or privies, or latrines, in the town of Mount Savage, shall cover all stools and other evacuations with a layer of sand, earth or ashes as soon as passed.

By order of the

BOARD OF HEALTH FOR ALLEGANY COUNTY.

The general measures of prophylaxis to be accomplished were (a) the effective closing of polluted springs and wells; (b) the covering of the contents of all privy vaults by a sufficient layer of earth. The Union Mining Company to assign two gangs of a half dozen men with a cart, to attend to this duty, while all privies should be required to contain earth or ashes for sprinkling after each use of the vault.

It was recommended that four or six district nurses should be appointed to visit each typhoid patient two or three times daily, and to attend to all measures of domestic and personal prophylaxis, and to be personally responsible for the disinfection of the stools.

It was proposed by the County Board of Health to put some person in the town of Mount Savage with constabulary powers to render effective the regulations of the said board.

It was recommended to them that should this precaution prove necessary, a physician be placed in charge, to be given all proper powers and to have under his charge the four nurses and the gangs of men necessary to cover the contents of privy vaults and to perform all other necessary sanitary work.

It was further recommended that the duties of said physician and nurses and laborers under his care be definitely prescribed, *e. g.*

DUTIES OF PHYSICIAN IN CHARGE.

1. To inspect all privy vaults once daily and to see that the contents of the same are properly covered.
2. To inspect all sealed water supplies once daily, to see that the same are and remain effectually closed.
3. To supervise the work of policing gangs, and see that all necessary hygienic measures are taken.

DUTIES OF NURSES.

To prevent any contagion through the patient or his stools. To properly disinfect and keep the latter covered. To supervise the burial of the stools after efficient disinfection in a pit with quicklime.

DUTIES OF POLICING GANGS.

To report to the physician in charge daily with shovels and carts.

It was agreed by the company and the Board of Health of Allegany County that each should furnish two nurses for the purpose of domestic prophylaxis and the care of the sick.

It was also agreed that the policing gangs should dig holes with a post-hole digger on the premises of each typhoid case, and that they should properly care for the closets and attend to all necessary policing.

It represented to the company—

That the main source of infection was undoubtedly destroyed.

That the efficient executions of these measures would prevent any further epidemic sickness.

For a permanent supply a sufficient number of artesian wells, or a supply of springs at a considerable distance, were most practicable.

CONCLUSIONS.

The conditions of the earth closets in Mt. Savage and their situation on the side of the mountain constitute a serious menace to towns using water from the Potomac River or its north branch.

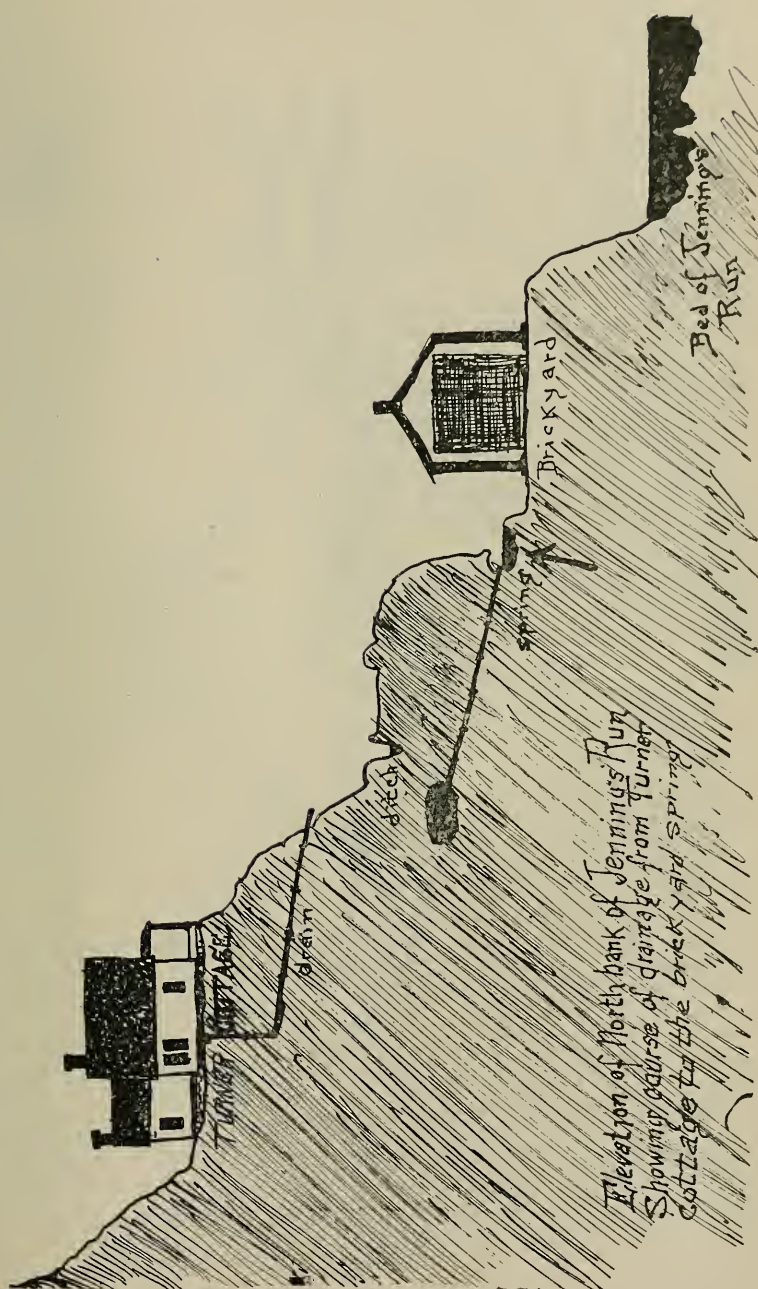
Complete but gradual subsidence of the epidemic may be looked for at Mt. Savage.

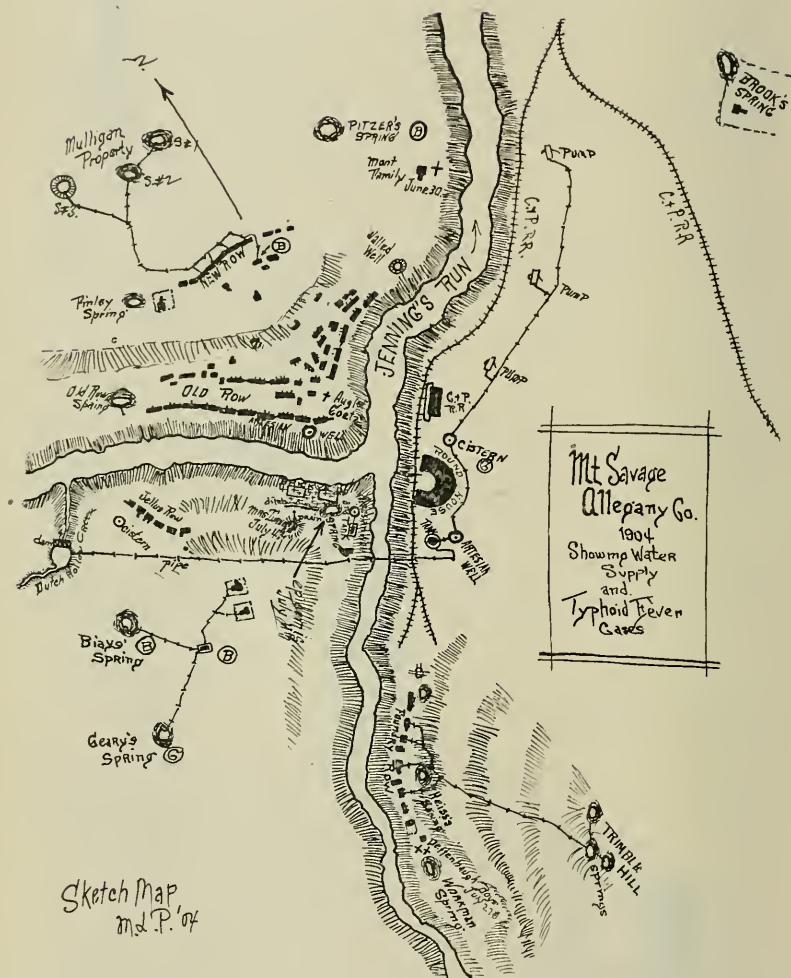
The very large percentage of non-immunes affected by the water from the brickyard spring and the very short period of incubation of 20 of the cases (one week) render it probable that this spring was polluted to a degree comparable only to a bouillon culture of the bacillus typhosis.

In the case of a nurse at the Charite Hospital who drank with suicidal intent a bouillon culture of the typhoid bacillus a similar short period of incubation was observed.

Respectfully submitted,

MARSHALL LANGTON PRICE,
Medical Assistant.





WATER SUPPLY OF FROSTBURG, 1904.

BALTIMORE, August 31, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland.

Sir: I have the honor to submit herewith a report on the water supply of Frostburg in Allegany county made pursuant to your instructions on August 18th, 19th and 20th.

No unusual prevalence of enteric diseases had been reported from Frostburg during the late summer and fall of this year, but it was suspected that a portion of the "South Slope Supply" might have become unhealthful in other ways owing to the close proximity of some of the springs to a slaughter-house and the proximity of others to the drainage of a mine, the property of the Mount Savage Fire Brick Company.

An inspection was made of the town ice-plant as the water supplying the boilers and used in the manufacture of artificial ice was drawn immediately below one of the two abattoirs supplying the town.

The water supply of Frostburg comprises three varieties of waters: About fifteen springs, two artesian wells, surface water impounded during rains in the reservoir, and draining, an area of modern size, immediately about the latter.

All of these waters are delivered to the reservoir and are carried thence by an iron water main into the town.

The water supply is conveniently divided into two systems: the North Slope System, derived from the North Slope of Savage Mountain; the South Slope System, derived from the South Slope of Savage Mountain facing towards Frostburg.

The supply is thus derived from two separate water sheds on opposite sides of the ridge. The decline of the north slope of Savage Mountain is interrupted by a rise some distance down, which forms the south slope of a second ridge—the Little Savage Mountain.

The rise of the south slope of Great Savage Mountain is practically continuous from Frostburg to the northeast. About two miles out from the town the ascent becomes quite steep, and continues so until the top of the ridge is reached, at a distance of about three miles northeast of Frostburg, and an elevation of about 800 feet above the town. The decline then continues on the north slope until the Little Savage Ridge is

reached. The elevation of this ridge is about 100 feet less than that of the main Savage Ridge.

The valley between the big and little Savage Ridges is constantly marshy, and several of the springs of the north slope system are located in this valley.

The south slope of both ridges are carboniferous in the underlying strata. The north slopes are Devonian.

The soil is a sandy loam, and is quite porous. With the heavy rains, the low lying portions of the south slope are flooded, and a considerable expanse of surface water flows into the streams.

The north slope system contains nine springs, all of which are distant from ordinary sources of contamination, and furnish a constant supply of water of good quality.

The water from the springs is collected by a series of pipes which join to a 4-inch pipe which passes over the ridge of Big Savage and joins with the south slope supply about 300 yards below the lower spring.

The water of the combined system is carried below the reservoir by a 4-inch iron pipe, where it joins the 8-inch main, to Frostburg. A pipe passes north up the slope to the reservoir, where the excess water is collected and stored.

THE SOUTH SLOPE SYSTEM.

In the South Slope System are included two artesian wells and at present four springs.

The *artesian wells* have been sunk at the side of the reservoir and empty by iron pipes directly into it.

Springs. The springs in use at present are the following: Arnold spring, Spring No. 1, Dry spring, Legier spring.

Two springs had been cut out of the system two weeks at the date of the inspection, and will probably be permanently disconnected. These are: A spring on the grounds of Abattoir No. 2, Whittack spring.

The approximate location of these springs and pipe connections are shown in the plat of the South Slope System.

ARNOLD SPRING.

This spring is located to the east of Abattoir No. 2, about a distance of 200 yards. The spring is enclosed by a wooden superstructure.

The refuse from the Abattoir is burned in the woods about the spring though usually at some distance. Cattle and hogs are allowed to wander in the surrounding woods about the spring. It is not enclosed by any fence.

The water is clear and free from odor and palatable. A definite statement as to its purity is reserved until an analysis is made.

SPRING No. 1.

The water from this spring is augmented by the supply from the Arnold spring which passes down the slope through a four-inch pipe and empties into Spring No. 1. The spring is bricked and cemented and covered by a wooden superstructure. One of the original branches of George's creek passes between it and the Arnold spring. This small branch receives the drainage of the Mount Savage Brick Co. mine. The water from this mine probably contains alum in addition to the usual calcium and iron salts, as it is mildly astringent in the mouth and is said to act as a mordant in fixing the pigment of blueing on cotton and linen articles on which it is used in laundry work. This water is probably at times contaminated by human effluvia. There have been some cases of typhoid fever among the miners in past years. During wet weather this stream expands greatly and covers a considerable surface. It does not however approach very near Spring No. 1, which is elevated some distance above the level of the bed of the creek.

The water in Spring No. 1 is clear and palatable and is usually abundant.

A definite statement as to its purity is reserved until the results of the analyses are known.

DRY SPRING.

This spring lies east of Spring No. 1. It is boarded and cemented and roofed by a wooden superstructure.

The spring does not contain water except during wet weather, when the supply from other sources is always abundant. It is not, therefore, an essential part of the system. A 1-inch pipe connects it with the 4-inch pipe from Spring No. 1 about 200 yards below. The 4-inch pipe from Spring No. 1, carrying also the water from the Arnold Spring, joins with the 4-inch pipe conveying water from the North Slope System. • Some

distance below their junction they are joined by a 4-inch pipe from the Legier Spring, which lies a considerable distance east.

The 4-inch pipe carrying the water of the combined systems joins the 8-inch main to Frostburg several yards below the reservoir.

The two springs already spoken of as disconnected join the 4-inch pipe about 100 yards above the reservoir.

Where the 4-inch pipe joins the 8-inch main a 4-inch pipe passes back to the reservoir, where the excess water is stored for emergencies, such as a prolonged dry season or a fire in the town.

RESERVOIR.

The impounding reservoir is an improvised arrangement constructed by building a masonry dam across the bed of the branch of George's creek and filling the bottom of the artificial pond formed with stone and cement.

The resulting impounding system is unsatisfactory for several reasons :

1. The bed of the stream is very porous and the leakage considerable. The patching which the reservoir has received from time to time has not sufficed to prevent a tremendous and constant loss of water.

2. The reservoir is placed in just the reverse of a proper position for a storage system. Instead of being placed on an elevation so as to drain off on all sides it is situated at the bottom of a decline where it receives drainage from a large area, especially to the north.

The reservoir depends for its replenishment in wet weather largely from the surface drainage of the surrounding elevation, especially the slope to the north. Forming part of the north slope of the reservoir is a farm covered by manure and fertilizer. This drains into the reservoir during all the heavy rains. Surface water is also received from the east. The west and south are protected by a wall.

The stream originally entered the north-east corner of the space now used as a reservoir, but it has been diverted by a ditch and passes along the east side of the reservoir and empties into the stream below the masonry wall.

The reservoir is filled (besides the supply derived from surface water and the two artesian wells) by a reflux four-inch

pipe which returns the excess of water, not flowing through the eight-inch main to Frostburg, to the reservoir.

The land upon which the water system is located is the property of the Borden Mining Company. The water rights and privileges are leased for the sum of \$150.00 annually. The most expensive part of the system is the reservoir which probably represents about \$10,000 expenditure.

It is proposed to construct a new reservoir on an elevation which drains wells on all sides and is not exposed to surface contamination. This elevation is at a considerably lower level than the present reservoir, but this is no disadvantage as the pressure of the water must even from here be greatly diminished before it can be delivered to Frostburg.

There is reason to believe that if this reservoir, (the cost of which will be inside of \$10,000.00), is constructed that it will not only be an improvement from a hygienic standpoint, but that it will be actually an economy in the end.

FROSTBURG ICE PLANT.

Frostburg is supplied by ice from a plant located in the town. The water to supply the boilers and for the manufactured ice is taken from the branch of George's Creek some distance below the reservoir. An artificial pond is formed by a dam across the bed of the creek, and from this water is piped directly to the plant.

The abattoir (Abattoir No. 1), is midway between the reservoir and the ice company's pond. This is on the east branch of the creek into which its drainage discharges.

The ice plant employs the usual ammonia system, and consists of two boilers, a double cylinder vertical low pressure engine, the latter operating the ammonia pumps, a series of ammonia condensing coils, a series of freezing coils, and a freezing tank.

The capacity of the plant is about six tons in twenty-four hours. All of the water used in the production of artificial ice is distilled, the condensed steam from the engines being used for this purpose. The water capacity of the plant is about ten tons in twenty-four hours.

The steam, after leaving the engines, is carried through a separator by means of which the cylinder oil, which it con-

tains, is removed. It is then carried to a boiler where it is boiled by steam coils to remove the remaining oil and other impurities. The condensed water is finally used to fill the ice cans.

The ice after passing through this process is absolutely pure and cannot be in any way injurious unless contaminated in handling.

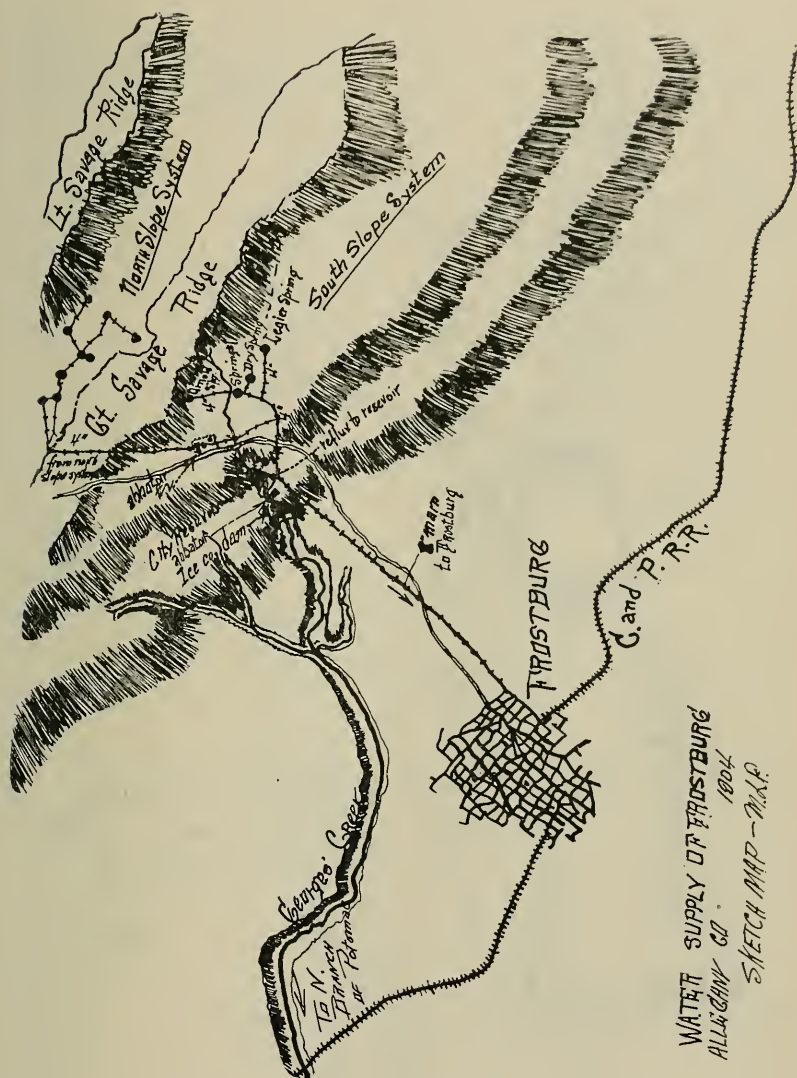
The only water used in the process not distilled is that used to cool the steam-condensing coils. This water after passing over the coils is poured over the ice cans to loosen the ice. The possibility of contaminating the ice in this way is small, as a temperature approaching the boiling is required to melt the ice so that it will fall from the cans. It flows moreover only on the can and only the excess touches the ice.

The springs of the North Slope System have not been suspected of any impurities and were consequently not inspected.

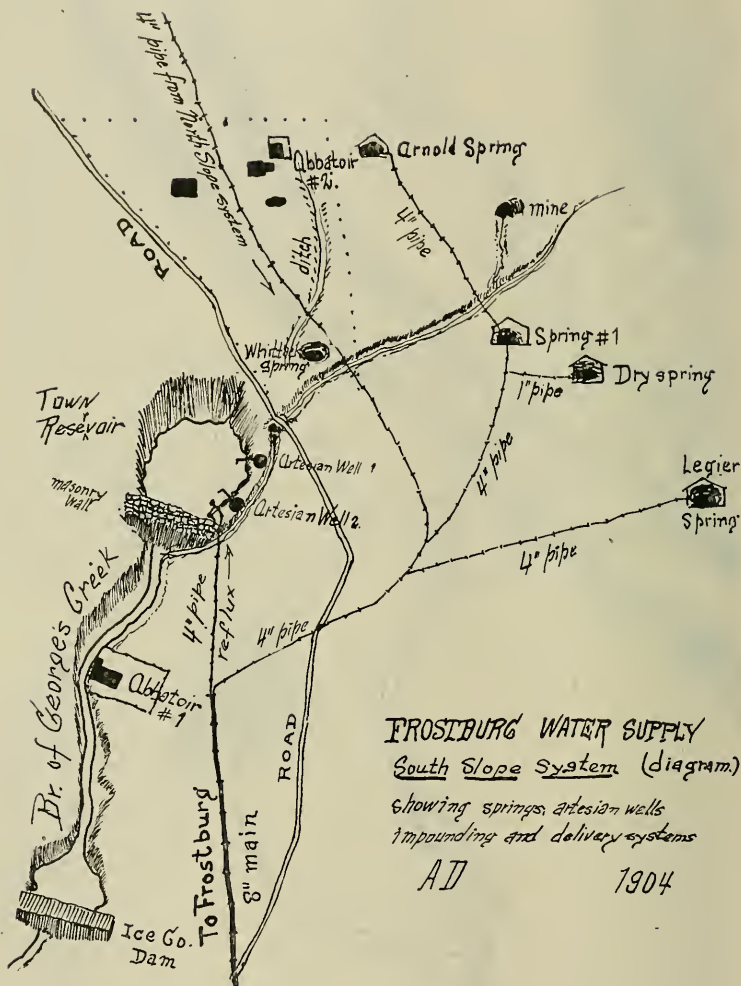
The springs of the South Slope are favorably located with the exception of the two springs now closed. Of these the Whittack (Wittag) spring is undoubtedly contaminated with organic matter, as the water has an unpleasant odor and a scum of algæ grows on the surface. The drainage from Abattoir No. 2 passes close by in a shallow ditch. Both of the springs should be permanently closed.

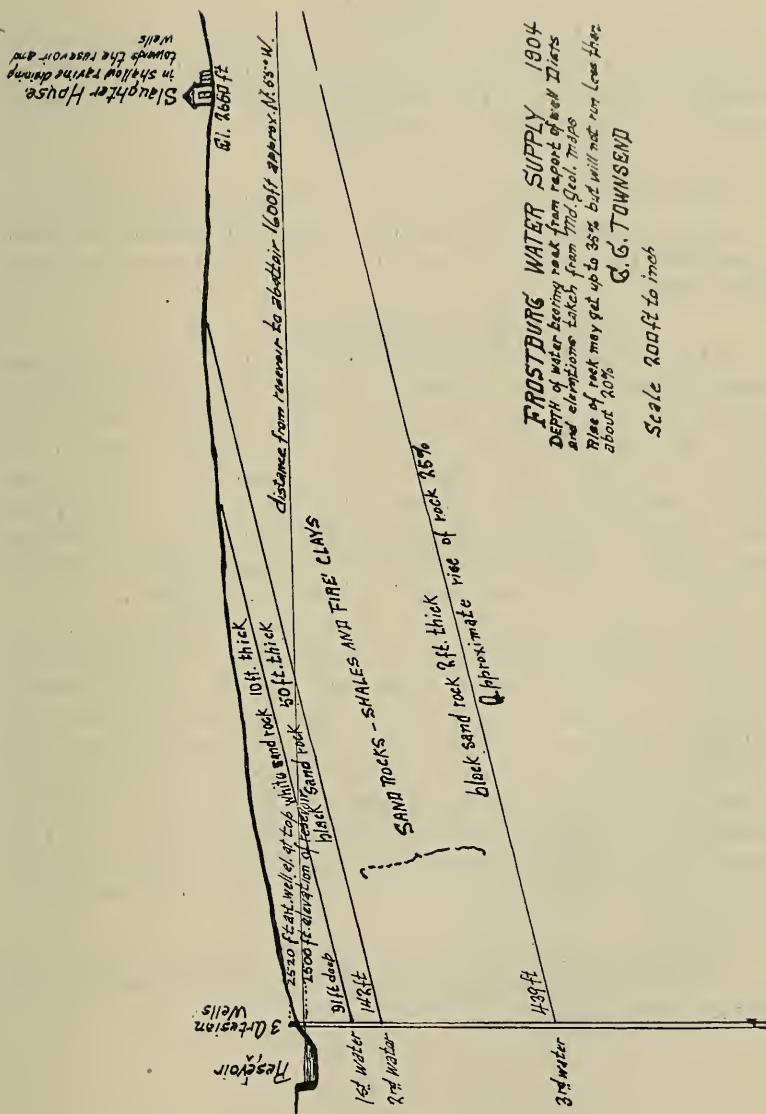
Respectfully submitted,

MARSHALL LANGTON PRICE,
Medical Assistant.



PHIL-DAVID HOLEYS
1901 DO ANDRETTA
PLUMBING & ADDING WATER





ADDENDUM.

The results of the bacteriological examination of the water supply do not change materially the provisional findings of the sanitary inspection. The bacterial constitution of the water samples is given in the following table :

BACTERIOLOGICAL EXAMINATION OF FROSTBURG WATER SUPPLY.

In all, seventeen specimens were examined, sixteen of which came from the town water supply. Of these sixteen specimens, there were :

Good 1 ; fair 2 ; suspicious 12 ; bad 1.

Only one specimen—that classified as 'bad'—contained the colon bacillus. This specimen was drawn from 'Savage Run' which is not used for the general water supply of the town, being grossly polluted by refuse from a slaughter house on its bank. In connection with the latter there is a pig-pen, the pigs being fed by offal from the slaughter house. An atypical colon bacillus appeared in a specimen drawn from one of the town spigots. The remainder of the specimens did not contain the colon bacillus or any other fermentative organism.

The remaining specimens were regarded as suspicious on account of their high bacterial content. It is impossible to say however what number of organisms any of these specimens originally contained, as owing to the omission of icing the samples as soon as collected, considerable proliferation must necessarily have occurred between the time of collecting the samples and plating in the laboratory. It would be a mistake therefore to condemn these specimens on the evidence of this examination. The absence of anaerobic and zymogenic organisms would indicate an absence of, at any rate, pathogenic organisms.

The water from Savage Run is grossly polluted and is unfit for drinking purposes and should be used with caution for laundry or bathing.

BACTERIOLOGICAL ANALYSIS, FROSTBURG WATER SUPPLY, SEPTEMBER 17, 1904.

	Aerobic	Anaerobic	Colon Bacillus	Class of Water.
1. Artesian well emptying into storage No. 1 Reservoir.	600	0	Absent	Good
2. " " emptying into storage No. 2.	24000	0	Absent	Suspicious
3. Surface water from artesian wells.	12000	0	Absent	"
4. Storage reservoir (from centre).	600	5	Absent	Fair
5. Wittig spring in field below slaughterhouse.	5000	0	Absent	Suspicious
6. Arnold spring.	600	20	Absent	Fair
7. Spring No. 1.	2500	0	Absent	Suspicious
8. Spring emptying into Reservoir No. 1.	3600	25	Absent	"
9. " " " No. 2.	3600	10	Absent	"
10. " " " No. 3.	3200	4	Absent	"
11. Spring No. 4 (pipe containing water from 4 small springs)	5000	10	Absent	"
12. Spring No. 6 (from 4 small springs)	5000	0	Absent	"
13. Savage run water.	500	15	Present in 50 c.c.	Bad
14. Spigot No. 7, east end town supply.	1800	.....	Absent	Suspicious
15. Spigot No. 8, west end town supply.	5000	.....	Atypical in 50 c.c.	"
16. Spigot No. 9, centre town supply.	12000	.....	Absent	"
17. Malted ice water from town plant.	5	.....	Absent	Good

THE WATER SUPPLY OF EASTPORT.

TYPHOID EPIDEMIC OF 1904.

September 17, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland,

Baltimore.

Sir: I have the honor to submit herewith a report on the water supply of Eastport, which supply was inspected on September 1st, in accordance with your instructions.

The town of Eastport lies southwest of Annapolis, from which it is separated by Spa Creek.

The sewage from Annapolis empties near the Annapolis side of the Eastport bridge, near the junction of Spa Creek with Chesapeake Bay.

The population of Eastport numbers about 1,000 persons. The town has been in existence as a settlement about twelve or fifteen years. It has neither a water nor a sewerage system. All of the water used by the town comes from sub-soil wells. Each house, or in some cases two houses, are supplied by a sub-soil well. The well is dug at the back of most of the houses, and the water is pumped into the kitchen by a hand-pump. The universal earth closet is also dug in the back yard at a distance probably averaging about twenty feet from the sub-soil well.

The relations of the closet and well are such that the latter must necessarily drain the former whenever the sub-soil water is low and the level of the well depressed by pumping.

A moderate amount of typhoid fever appears annually in Eastport during the late summer and fall. The present rise in the typhoid mortality became marked early in August.

WATER SUPPLY.

Eleven samples were taken of sub-soil water from the Eastport wells. Three samples of Annapolis water were drawn, one from the city supply from a private water spigot and two of sub-soil water from surface wells.

The bacteriological examination of Annapolis waters resulted as follows:

Sample from city tap—good; samples from 2 sub-soil wells—1 bad, 1 suspicious.

The bacteriological examination of the eleven samples of sub-soil water drunk in Eastport resulted as follows :

Bad, 9 ; fair, 2 ; good—none.

Of the nine samples of Eastport water classified as “bad,” seven contained colon bacillus and two were condemned on account of an excessive bacterial content. The majority of samples containing colon bacillus held also an excessive number of other bacteria.

The following table gives the results of the analysis of all the waters collected :

BACTERIOLOGICAL EXAMINATION OF WATER SUPPLY.

Sample From.	Bacteria Per c.c.		Colon Bacillus.	Classification of Sample.
	Aerobic.	Anerobic.		
Annapolis:				
1. Pump, Bladen street extended	1500	300	Absent	Suspicious (B. E.)
2. Pump, Lincoln street	5000	600	Atypical pres. in 50 c.c.	Bad
3. Annapolis city tap	120	72	Absent	Good
4. Spa creek below Annapolis sewer	24000	80	Absent	Bad (B. E.)
Eastport:				
5. Boessel, drug store, pump	1350	300	Present in 50 c.c.	Bad
6. Elliot pump	750	50	Absent	Fair
7. Meade kitchen pump	420	10	Present in 1-50 c.c.	Bad
8. Johnson-Wilson pump	1200	600	Present in 1-50 c.c.	Bad
9. Clarke-Brown pump	4500	10	Absent	Bad (B. E.)
10. Atwell-Shores pump	12000	600	Present in 1-50 c.c.	Bad
11. Shores well	6000	300	Present in 1-50 c.c.	Bad
12. Whittington well	12000	600	Absent	Bad (B. E.)
13. Riley well	1500	30	Absent	Fair
14. Worthington well	3000	.....	Present in 1-50 c.c.	Bad
15. O'Connor pump	1800	.....	Present in 1-50 c.c.	Bad

CONCLUSIONS.

While it appears reasonably certain that the method of infection in several cases was by means of drinking water, it is not certain that some of the cases were not infected through contaminated milk.

The handling and delivery of milk by a dairyman while typhoid fever is active in his family is a source of considerable danger. As this dairy is the only source of milk for Eastport, it would be an undue hardship to prevent altogether the use of this milk. Temporary arrangements should be made, however, for the removal of the herd from the present premises and the delivery of milk by some person not exposed daily to an active infection.

There is no immediate practical method of reform in sight as regards the water supply, and the only hope for the present is the thorough boiling of drinking water, all of which should be regarded as contaminated. For the future an artesian well system would be entirely practical for a town of the size of Eastport.

An endeavor has been made to induce the Annapolis Water Co. to lay a main into Eastport. The prospects of granting this request in the near future is not great, as the present supply is barely sufficient for the needs of Annapolis.

Respectfully submitted,

MARSHALL LANGTON PRICE,
Medical Assistant.

WEST ARLINGTON NUISANCE CASE.

December 3d, 1904.

DR. JOHN S. FULTON,

Secretary State Board of Health of Maryland,

Baltimore, Md.

SIR: I have the honor to submit herewith a report concerning the investigation of the nuisance case of Halsted vs. State Board of Health *et al*, made pursuant to your directions September 30th and November 29th, said nuisance consisting in fermenting and decaying sewage and other drainage emptying into an open ditch or drain, on the east side of the Pimlico Turnpike, which sewage and drainage gave rise, by reason of

such fermentation and decay, to foul, obnoxious and unwholesome odors, offensive to persons living in proximity to the open ditch or drain mentioned.

The inspection made September 30th was with the object of determining the existence of said nuisance, the extent of the same, and the means necessary for its suppression.

Mr. Halsted informed me at that time that his drainage was then emptying into a new cesspool recently constructed, and not connected with the open drain. This cesspool was about 4-6 feet in diameter, and, according to Mr. Halsted's statement, 35 feet deep. The walls were of brick, uncemented. This cesspool was full to within 6 or 8 feet of the top, with a turbid, grey fluid, containing large bubbles and particles in suspension, the mass giving off a sour and disagreeable odor, active effervescence being continuously noted.

This cesspool was evidently insufficient to dispose of the drainage of the hotel, according to the plans of the constructor, namely, by percolation into the sub-soil stream of water, and Mr. Halsted informed me that he intended to put in a Waring filtration plant in its stead. For this purpose he asked two weeks' time. The part of the drainage entering this recently constructed sub-soil cesspool could only be approximated, the remainder entered the old cesspool *1, Figure 2, and then discharged by an overflow pipe through which it flowed to a man-hole into a covered sewer, (5, Figure 2), and thence beneath the road to the beginning of the open ditch or drain, (6, Figure 2.) The length of this covered underground pipe being one hundred yards (100 yards) more or less. The course thence followed is indicated by the figures 6, 7, 8 and 9 on the accompanying chart, (Figure 1).

Sewage had evidently been recently discharged into the opening of the ditch, (6, Figure 2, 5, Figure 1) as the level of the water was raised and water was flowing fairly rapidly in the open ditch, (5, 6, 7, Figure 1).

The drain from the overflow of the cess-pool (1, Figure 2) to the beginning of the open ditch (3, 4, 5, 6, Figure 2), is constructed of 10 or 12-inch terra cotta sewer pipe which empties into a catchall (5, Figure 2), and then crossing beneath the road (Wylie ave.) empties into the end of the drain (6, Figure 2). From the opening of said terra cotta sewer, the sewage discharged therefrom passes slowly down an open ditch on the

east side of the Reisterstown turnpike a distance of 150 yards, more or less, to a culvert (5, 6, 7, Figure 1). Beneath this culvert the stream divides and flows and thence proceeds on either side of the Reisterstown turnpike 350 yards, more or less, through two open ditches on either side of the road, the open ditch being interrupted at intervals for short distances varying from 10 to 40 yards by drain and sewer pipes beneath the road. After passing from the point of division 350 yards there or thereabouts, the contents of both ditches are piped into a coolie or arroya tributary to a small stream known as Gwynn's run, into which the sewage finally empties. The open ditch at its origin probably receives sewage from four or more houses situated in Baltimore county, viz: Halsted's road-house, Mrs. Halsted's house, Dr. Hill's house, and a house on the northwest corner of the Reisterstown pike and Wylie avenue, (Mr. Beck, tenant), and one house in Baltimore city, viz: Mr. Shirley's. (The drainage from the latter place is now said to be cut off). The open ditch on the east side of the Reisterstown turnpike (7-8, Figure 1) receives from the cottages (c. c., Figure 1) waste water from the kitchens and bath rooms by means of several gutters and ditches (D, Figure 1). Excrementitious sewage is probably absent from the drains emptying from the east side of the Reisterstown turnpike, such material probably being disposed of in earth closets in the usual way.

Gwynn's Run, already mentioned (see Figure 1), in addition to the drainage and sewage conveyed by the open ditches on either side of the Reisterstown pike, conveys sewage and other waste from a number of houses along its course (N, Figure 1). As this is a flowing stream during dry weather its function as a remover of sewage has so far been successful without giving rise to any considerable nuisance. The Run empties some distance below into Gwynn's Falls which also receives a large amount of offensive refuse from various establishments along its course through Baltimore city.

The condition of the open drain and its contents, noted on September 30th, was as follows: At the point 6 (Figure 2) the beginning of the drain is about 4 feet in diameter and capable of holding 3 feet of water.

The ditch during the remainder of its course averages two to three feet in width and about a foot and a half in depth. The bottom was overgrown with sedge grass and other rank vegetation. The current was sluggish and in places imperceptible.

The bottom of the ditch was covered with a grey decomposing scum which gave forth an offensive and peculiar sour odor when stirred, or otherwise disturbed, an opaque, thick, viscid, dirty grey scum formed on the surface of the water whenever the current was slow. The water was turbid, and contained bubbles of gas.

On October 30th, at a temperature approximating 50° F., the odor was perceptible in the still air a distance of 50 feet, more or less. In hot summer nights the odor was said to be very offensive and to pervade all the surrounding atmosphere, the fermentation not becoming marked apparently at temperatures below 30° C. A nonparasitic nematode occurs in the water in the upper layers of the sediment.

On November 9th I again visited Mr. Halsted's Hotel in accordance with your instructions in order to definitely and entirely determine the course of the sewage at that time.

Sol. uranin was used for the demonstration. The course of the dye from Halsted's place to the open drain is shown on Figure 2-1, 3, 4, 5 and 6.

The first portion of the solution was mixed in the bath room closet. After emptying the tank once the flow of water failed and several quarts of water were poured into the bowl, the overflow passing down into the pipes. Fifty gallons of solution were made up in the bath-tub with a half ounce of uranin. As this solution failed to appear in the open ditch 50 additional gallons were mixed in the bath-tub with uranin and the solution allowed to flow into the sewer pipe. This solution was found in the old cess-pool (D 1, Figure 2), and in the overflow box at 5. About one and a half hours after its appearance at 5 the solution became evident at 6. All of the water colored by the pigment gave the vivid grass green color and fluorescence exhibited by the sample collected from the drain and herewith appended Exhibit A.)

CONCLUSIONS.

1. The course of the drainage from Halsted's Roadhouse to the open drain remains substantially the same as previously noted, and as shown in Figure 2, viz, from the house to the old cess-pool D 1, Figure 2, from thence the overflow passes into the sewer pipe to a wooden box 3, 4 and 5, and thence beneath the road to the beginning of the open drain at 6. (All in Figure 2.)

2. The peculiarly strong and sour odor of the contents of the open drain (6, Figure 2) seems to be due more to the products of the acetous fermentation of light wines and beers passing into the drain from Halsted's place through the agency of the *saccharomyces* particularly the *saccharomyces cerevisia* derived from the yeast of beer.

3. Excrementitious sewage plays a part in this process, though it would be unable alone, under ordinary conditions to give rise to the powerful and penetrating odor noticable from this drainage.

RECOMMENDATIONS.

1. The installation of a Waring or other sub-surface filtration system on Halsted's place, would dispose of so much of the nuisance as is produced on these premises, although at some expense to the owner of the property.

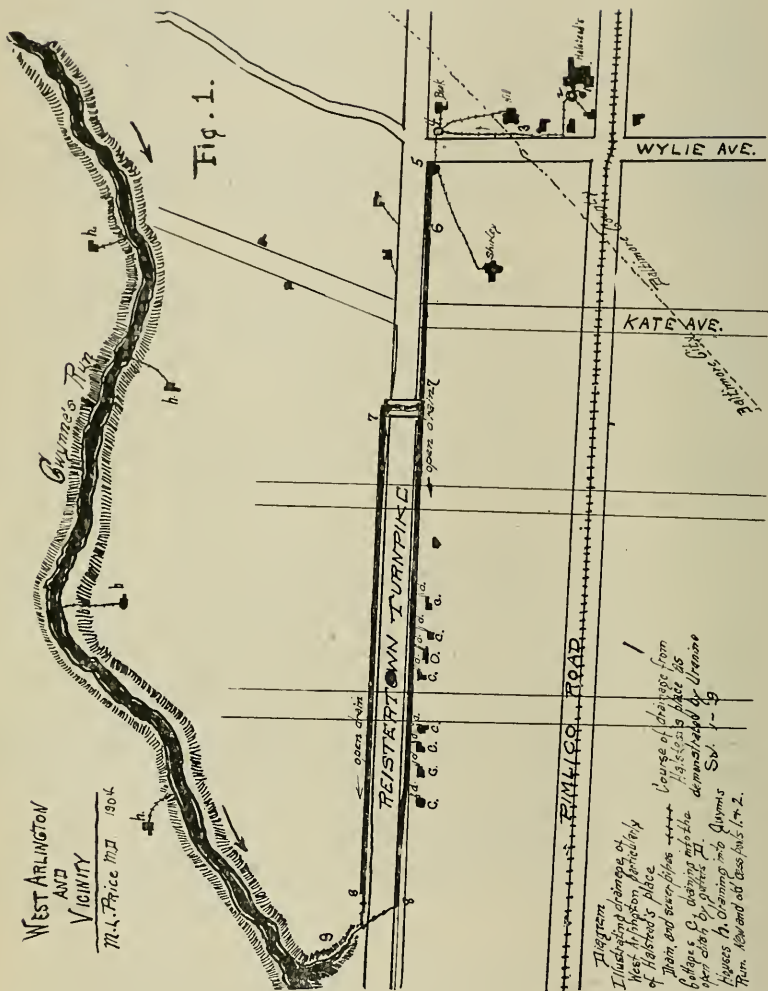
2. The best solution for conditions now existing in West Arlington would be the extension of the present line of sewer pipe from its present ending at 5 Figure 1 down the turnpike to the point marked 8, Figure 1, and discharge the sewage from there into Gwynn's Run.

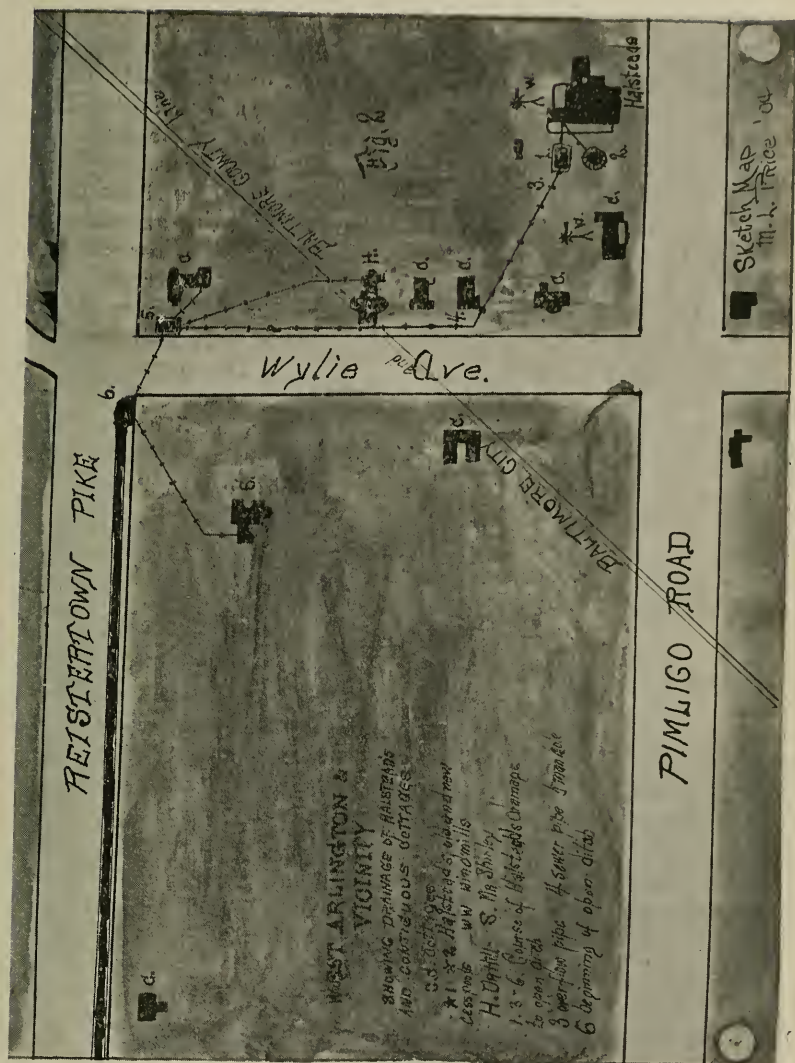
The expense of installing this system would be very small, and would remove satisfactorily the conditions now complained of. The stream of Gwynn's Run already receives this sewage and acts also as a common sewer for the neighborhood through which it runs. As Gwynn's Run contains at all seasons a good volume of water with a good current, it appears that it will be able to successfully dispose of all the sewage which it now receives, and provide for the normal increase of the next ten years.

Respectfully submitted,

MARSHALL LANGTON PRICE,

Medical Assistant.





**Hearing Before Magistrate's Court of Deyhough, in the Case of the
Sale of Unwholesome and Diseased Meat, January 12, 1904.**

PROCEEDINGS ABSTRACTED BY DR. PRICE.

About the middle of December a heifer, owned by Mr. Chaney, was sold by him to Mag. Smith (colored), for \$1.50. The heifer was known to be lame in one hind leg. The cause of the lameness was said to be due to goring by a steer.

The heifer was disposed of by Smith (the woman's husband) to a Mr. Deyhough, for a consideration, the amount not known. Deyhough denied having paid any money for her.

Quarters of the animal were bought by Sprecher, Bowers and Mullineux. All persons who ate of the meat were taken with gastric disturbance and diarrhoea. The meat had an offensive odor and turned black very quickly. The quarters were sold by Deyhough at 4 cents and 5 cents a pound. Sprecher bought a hind quarter, weighing 75 pounds, at 5 cents. He used about five pounds, from which he became sick, and he discovered a tumor upon the quarter which he was using.

After finding that all the purchasers of the beef had become sick from its use, Sprecher swore out a warrant before Justice Lewis, who appointed Thursday, January 12th, at 1 P. M., for the hearing.

The quarter in Sprecher's possession, when examined on January 12th, had been frozen since the week before Christmas, and the tissues were so disorganized as to make examination difficult. The bone at the lower end was deficient, its place occupied by a cystic cavity containing a yellow disorganized exudate which, in common with the rest of the quarter, was frozen. The lower portion of the hind quarter was sawed across and the bone split longitudinally with a saw, including the middle of the cystic cavity. A penetrating and disagreeable odor was given off during the section. The bone terminated below the knee in a blunt extremity lying in the center of the cavity. The surrounding tissue appeared infiltrated. The specimen was removed to Baltimore for examination.

*Trial before Frank I. Lewis, Esq., J. P., Thursday,
January 15, 1905.*

The provisions of Section 53 of Article 43 were pointed out to the Court, who allowed examination and cross-examination of witnesses by the State Board of Health.

EXAMINATION OF WITNESSES.

Sprecher bought meat from Deyhough at 5 cents per lb. about one week before Christmas. The piece weighed 75 lbs. He ate about 5 lbs., and was made sick by it. He notified Deyhough December 16th that the meat was bad.

Bowers bought quarters of beef from Deyhough at 4 and 5 cents. Stated that his whole family had gastric disturbance and diarrhoea. On again attempting to use the beef his family was again sickened. He stated that the meat had a bad odor. The "front quarter was black and he noticed corruption about the bone."

Hartsuff testified as to the condition of the cow. Evidence immaterial.

Mrs. Bowers confirmed her husband's evidence. She stated that she and her family were sickened on the two occasions that they attempted to eat the meat. She attempted to make it into mince-meat, but had to take it off the stove and throw it away on account of the odor.

John R. Smith (colored) had taken care of the cow, and testified as to its healthy appearance and condition.

Mag. Smith bought the cow from Chaney for \$1.50. Made and sold butter and milk from her.

Mercer saw cow March 9th, and said that it was then lame and seemed to be in bad condition.

Chaney sold cow to Mag. Smith last of April.

Mullineux bought one quarter of the beef, which turned black promptly. It caused gastric disturbance and diarrhoea in his family. Meat had bad smell. Subcutaneous fat was absent. He was unable to get 2 pounds of suet from the meat.

Will Deyhough killed the cow. Stated heifer was in good condition. Admitted throwing away liver on cross-examination. He gave as the cause for this that none of the Deybough family ate liver.

Johnson testified that cow seemed in good condition except for lameness.

Dr. Price stated that he had attended the trial at the request of Dr. Chas. Foutz, of Westminster, County Health Officer, had examined the beef previous to trial (condition of same described). In his opinion meat was unwholesome for human food.

John Lindsay. Evidence immaterial.

Collins testified that the cow was in fair shape during summer, excepting for lameness.

Deyhough stated that heifer was healthy and sound, and meat was in good condition. Threw liver away because family do not eat it. Ate none of the beef himself. Did not buy cow, but stated that (Jack Smith, colored) owed him enough to pay for several cows.

Hebbs saw lame cow. Evidence immaterial.

The Court decided that as all the persons who had eaten the meat had been taken ill, there was evidence that the meat was not in good condition, and held *Deyhough* for the action of the Carroll county Courts. Bail fixed at \$100.00. Personal recognizance of other witnesses taken to appear before the Court. Amount fixed at \$25.00. (Court convenes second Monday in May, 1905, at Westminster.)

NOTE.—Defendant was indicted by the grand jury. Tried and acquitted by the petit jury.

**Statistical Analysis of Typhoid Fever in Maryland from the Laboratory
Records of the State Board of Health, (1899, 1900,
1901, 1902, 1903, 1904.)**

The Bacteriological Laboratory of the State Board of Health was established in 1899 to give physicians practicing in the State a convenient means of laboratory diagnosis in certain infectious and contagious diseases. A laboratory was established by the City Health Department the previous year for the use of physicians practicing in Baltimore city.

In cases of suspected typhoid fever, specimens of blood are collected on the inside of a small aluminum box, and mailed to the State Bacteriologist. A special outfit is used for collection of suspected malarial blood. Swab cultures of the throat on blood serum are examined for suspected diphtheria and specimens of the sputum for suspected tuberculosis. These four diseases comprise the routine work of the laboratory in the diagnosis of individual cases.

The examination of blood specimens for the Gruber-Widal re-action is a large part of this routine work, as it furnishes a rapid and satisfactory aid in diagnosis, and the only means of positive diagnosis in a large class of continued fevers. Among

these diseases, typhoid fever ranks second to tuberculosis in the amount of morbidity and mortality which it causes.

With each typhoid specimen, as with the three other diseases mentioned, a card of information is returned giving essential data in regard to the case. These records are of specimens examined in the laboratory during 1900, 1901, 1902, 1903 and 1904 and part of 1899, and are the data of the present study. The number of cards tabulated is as follows :

For the six years ending 1904, total number of cards 2,089. Positive Gruber-Widal re-action, 1,114—53.33 per cent. Negative Gruber-Widal re-action, 975—46.67 per cent. All the specimens of blood examined were not included in this list, as necessary data were omitted from several cards and others were evidently incorrect or inaccurate.

A positive re-action was not returned in many cases until two, three, or more specimens had been examined.

The usual dilution of blood employed is 1-100, and the maximum time allowed is two hours.

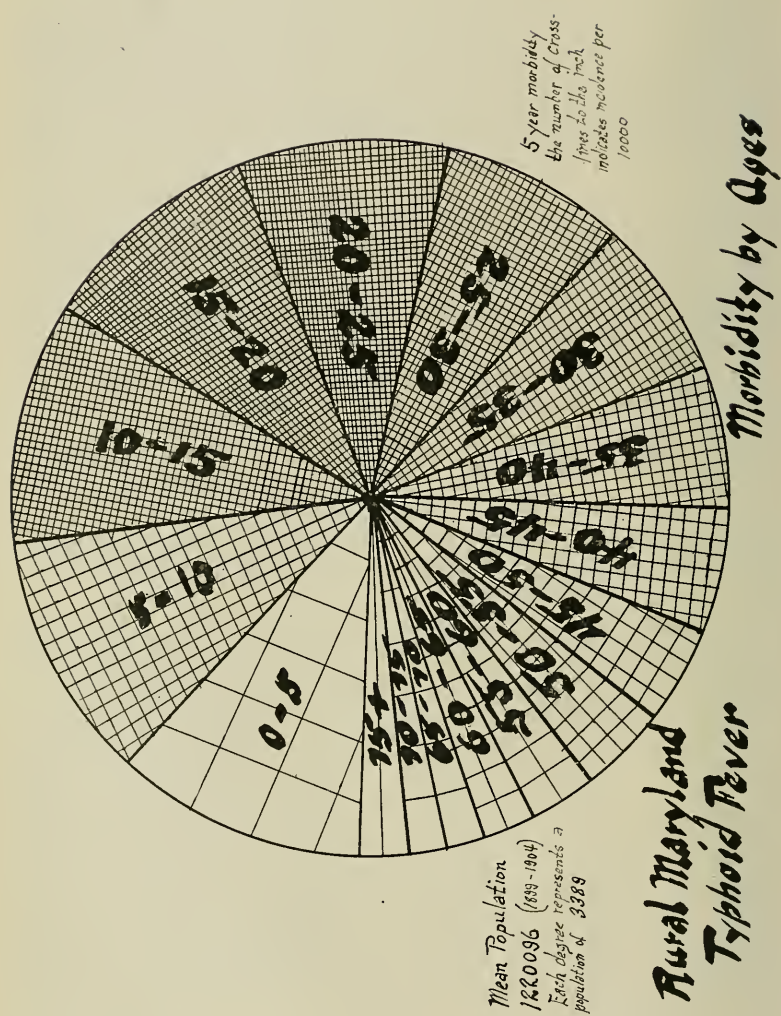
The suspicious cases have been tabulated as negative, even when no further examinations were made. The majority of suspicious cases furnished a partial re-action with loss of motility, but no agglutination.

Of the 1,114 cases tabulated, there were : Male, 587—52.69 per cent. Female, 527—47.31 per cent. A slight predonderance of males. According to race : White, 1,009 ; Colored, 105.

The following table shows the ages of the typhoid cases :

Cases.		Per Cent.	Cases		Per Cent.
0-1.....	1	21.....1.85	50-55.....	23.....	5.7
1-5.....	20		55-60.....	11.....	3.55
5-10.....	95.....	8.44	60-65.....	9.....	3.6
10-15.....	160.....	14.9	65-70.....	4.....	2.22
15-20.....	187.....	18.5	70-75.....	3.....	2.25
20-25.....	165.....	17.1	75-80.....	0.....	
25-30.....	119.....	14.0	Over 80.....	0.....	
30-35.....	97.....	13.0	Unknown.....	89.....	
35-40.....	62.....	9.31	Under 30 years.....	747.....	67.06
40-45.....	44.....	7.9	Over 30 years.....	367.....	32.94
45-50.....	27.....	5.8			

The largest number of cases occurred in the fourth quinquennial period (15-20 years.) The following chart shows the distribution of population and the typhoid morbidity according to the number living at each age period :



The number of lines to the inch indicates the annual morbidity per 10,000 persons living in each quinquennial age period.

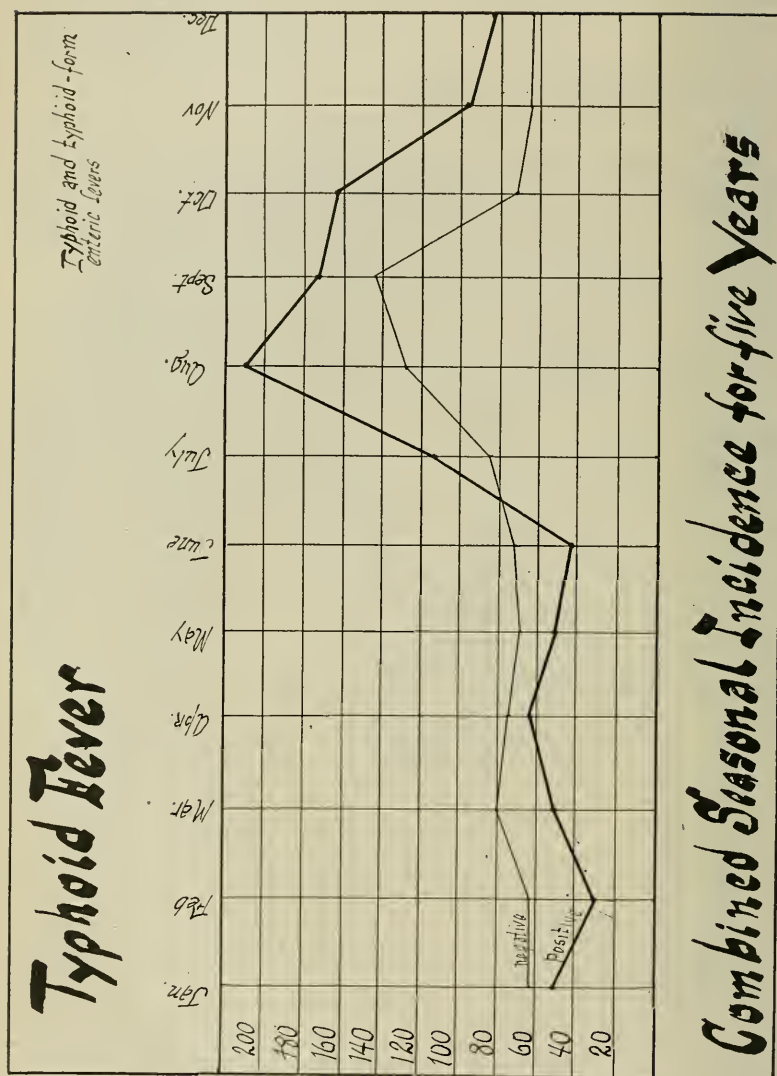
The figures probably represent less than half the total typhoid morbidity in the State.

SEASONAL INCIDENCE.

The typhoid morbidity rises suddenly about the beginning of August and drops with equal suddenness towards the end of October. The mortality curve follows the morbidity curve in its rise and decline about one month later. A considerable number of cases occur in the winter months.

SEASONAL DISTRIBUTION OF TYPHOID (POSITIVE RE-ACTIONS) AND PSEUDO TYPHOID (NEGATIVE RE-ACTIONS.)

	POSITIVE.		NEGATIVE.	
	Cases.	Per Cent.	Cases.	Per Cent.
January	48	4.34	62	6.36
February.....	27	2.44	63	6.46
March.....	49	4.43	80	8.2
April.....	62	5.61	75	7.7
May.....	51	4.61	68	6.97
June.....	44	3.98	73	7.5
July.....	94	8.49	83	8.5
August.....	209	18.90	126	12.72
September.....	175	15.82	143	14.66
October	164	14.82	73	7.49
November.....	98	8.86	65	6.66
December	85	7.68	64	6.5
December to June..	322	29.11		
June to December..	784	70.89		



Specimens of blood were examined from a number of cases presenting typhoid symptoms, but failing to give the Gruber-Widal re-action. No tests for colon, para-colon, or para-typhoid organisms were made. The curve of the pseudo typhoids traced in the laboratory re-actions follows closely the typhoid curve, but reaches its fastigium about one month later. The cases are relatively more numerous in the winter months. These curves are indicated in the chart above.

The following tables gives the number of specimens examined in the counties :

<i>Counties.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Per cent. Positive.</i>
Allegany.....	36	30	54.54
Anne Arundel.....	16	17	48.50
Baltimore.....	339	316	51.75
Calvert.....	0	0	*
Caroline.....	3	5	†
Carroll.....	25	20	55.55
Cecil.....	80	78	50.63
Charles.....	2	2	†
Dorchester.....	119	77	60.72
Frederick.....	86	70	55.13
Garrett.....	0	0	*
Harford.....	42	31	57.53
Howard.....	54	55	49.54
Kent.....	34	13	72.34
Montgomery.....	20	30	40.00
Prince George's....	65	60	52.00
Queen Anne's.....	5	6	45.45
Somerset.....	19	5	79.13
St. Mary's.....	0	0	*
Talbot.....	9	12	42.86
Washington.....	121	127	48.79
Wicomico.....	36	19	65.45
Worcester.....	3	2	†

* No specimens sent for examination in five years specified.

† Less than ten specimens in five years specified.

SYMPTOMATOLOGY.

The symptoms appearing in the typhoid cases were as follows :

Total number of cases tabulated, 1,114.

		<i>Per cent.</i>
Fever.....	1,080	95.05
Nose bleed.....	354	31.78
Rose spots.....	365	32.76
Diarrhœa.....	605	54.31
Bloody stools.....	48	4.31
Delirium.....	321	28.81
Right Iliac tenderness.....	699	62.75
Gurgling.....	728	65.17
Palpable spleen.....	325	29.17
Bronchitis.....	528	47.39
Chill.....	717	64.36
Sweating.....	757	67.95

Symptoms appearing in the (enteric) cases giving a negative Gruber-Widal re-action:

Total number of cases tabulated, 975.

		Per cent.
Fever.....	948	97.23
Nose bleed.....	280	28.72
Diarrhœa.....	433	44.41
Bloody stools.....	55	5.64
Delirium.....	258	26.46
Right Iliac tenderness.....	581	59.59
Gurgling.....	682	69.80
Palpable spleen.....	179	18.36
Bronchitis.....	523	53.64
Chill.....	654	67.08
Sweating.....	663	68.

Symptoms in order of importance.

Positive.	Per cent.	Negative	Per cent.
1. Fever.....	95.05	1. Fever.....	97.23
2. Sweating.....	67.95	2. Gurgling.....	69.80
3. Gurgling.....	65.17	3. Sweating.....	68.
4. Chill.....	64.36	4. Chill.....	67.08
5. Right I. tenderness.....	62.75	5. Right I. tenderness.....	69.69
6. Diarrhœa.....	54.31	6. Bronchitis.....	53.64
7. Bronchitis.....	47.39	7. Diarrhœa.....	44.41
8. Rose spots.....	32.76	8. Epistaxis.....	28.72
9. Epistaxis.....	31.78	9. Delirium.....	26.46
10. Pal. spleen.....	29.17	10. Rose spots.....	23.38
11. Delirium.....	28.81	11. Pal. spleen.....	18.36
12. Bloody stools.....	4.31	12. Bloody stools.....	5.64

The analysis of these symptoms disclose the fact that the symptoms or symptom group usually considered pathognomonic of typhoid, appear with equal frequency in a group of allied affections.

An examination of the chart shown on page 136 will indicate a class of continued fevers in Maryland following faithfully the typhoid curve, but with a less pronounced elevation; more frequent in the winter months, the curve reaching its fastigium about one month later than the typhoid, and declining to its normal about one month earlier.

The clinical symptoms would indicate that this allied class belongs to the paratyphoid or paracolon groups.

Fever was more common in the negative cases. Diarrhœa, epistaxis and rose spots were present in a relatively small group of typhoids and only slightly less frequent in the negative cases. Bloody stools appeared in 4.81% of the positive cases and 5.64% of the negative.

SYMPTOM GROUPS.

The symptom groups in each individual case have been tabulated in the following tables :

Afebrile Cases. There were 5 afebrile cases among the 991 cases tabulated above (0.5%). Of the symptoms presented one had bronchitis, chill, and sweating; one diarrhœa, bloody stools, gurgling and palpable spleen; one bloody stools, palpable spleen and bronchitis; one epistaxis, diarrhœa, right iliac tenderness, palpable spleen, sweating; one bronchitis, chill and sweating.

CASES WITH ONLY ONE SYMPTOM.

In five cases fever was the only symptom noted.

CASES WITH ONLY TWO SYMPTOMS.

Fever and diarrhœa.....	4	Fever and rose spots.....	1
“ “ sweating.....	4	“ “ right iliac tenderness.	4
“ “ chill.....	6	“ “ borborygmus.....	3
“ “ epistaxis.....	2	“ “ palpable spleen.....	1
“ “ bronchitis.....	3		

CASES WITH ONLY THREE SYMPTOMS.

Fever, chill, sweating.....	25	Fever, right iliac tenderness, chill.....	2
Fever, right iliac tenderness, gurgling.....	9	Fever, gurgling, palpable spleen.....	2
Fever, gurgling, bronchitis....	5	Bronchitis, chill, sweating.....	2
Fever, gurgling, chill.....	5	Fever, epistaxis, delirium.....	1
Fever, bronchitis, chill.....	4	Fever, epistaxis, right iliac tenderness.....	1
Fever, epistaxis, gurgling.....	3	Fever, epistaxis, chill.....	1
Fever, diarrhœa, right iliac tenderness.....	3	Fever, rose spots, gurgling....	1
Fever, diarrhœa, gurgling.....	3	Fever, delirium, chill.....	1
Fever, diarrhœa, chill.....	3	Fever, right iliac tenderness, bronchitis.....	1
Fever, diarrhœa, sweating....	3	Fever, gurgling, sweating.....	1
Fever, right iliac tenderness, sweating.....	3	Fever, palpable spleen, bronchitis.....	1
Fever, epistaxis, palpable spleen.....	2	Fever, palpable spleen, sweating.....	1
Fever, rose spots, diarrhœa ...	2		

TYPHOID FEVER CONTINUED.

The most frequent symptom group was chill, fever and sweating, 25 cases (2.03%). The next most frequent group was fever, diarrhœa, right iliac tenderness, gurgling, chill and sweating, 24 cases (1.95%).

The following symptom groups appeared more than ten times :

Fever, chill and sweating, with—

Diarrhœa, right iliac tenderness, gurgling and bronchitis.....	19
Right iliac tenderness, gurgling, bronchitis.....	19
Right iliac tenderness, gurgling, palpable spleen and bronchitis...	16
Epistaxis, rose spots, diarrhœa, right iliac tenderness, palpable spleen, bronchitis.....	15
Epistaxis, rose spots, diarrhœa, delirium, right iliac tenderness, gurgling, palpable spleen, bronchitis.....	15
Rose spots, diarrhœa, right iliac tenderness, gurgling, palpable spleen, bronchitis.....	15
Bronchitis	14
Right iliac tenderness and gurgling.....	12
Rose spots, diarrhœa, right iliac tenderness.....	11
Diarrhœa, gurgling, bronchitis	11
Epistaxis, diarrhœa, right iliac tenderness, gurgling.....	10
Gurgling, bronchitis.....	10

Fever, diarrhœa, right iliac tenderness, gurgling.....	10
--	----

NUMBER OF SYMPTOMS.

Of the 1230 cases tabulated, out of the twelve symptoms considered, there were :

		Per cent.
Cases with 6 symptoms	234	19.47
“ “ 7 “	227	18.88
“ “ 5 “	194	16.13
“ “ 4 “	150	12.47
“ “ 8 “	124	10.32
“ “ 3 “	87	7.24
“ “ 9 “	75	6.24
“ “ 10 “	52	4.32
“ “ 2 “	28	2.33
“ “ 11 “	26	2.16
“ “ 1 “	5	0.41

SYMPTOMATOLOGY ACCORDING TO AGE.

As the symptoms of typhoid are always modified by age, a classification of symptoms was made to conform as far as possible to two factors :

1. The re-action of the organism to disease in general, and especially typhoid fever.

2. The stage of development of the whole body, particularly of the alimentary tract.

Five age periods were recognized :

1. Early infancy.....	0- 1 year.
2. Childhood.....	1- 5 years.
3. Youth.....	5-15 years.
4. Adult life.....	15-50 years.
5. Age of involution.....	50+

1. *Early Infancy.*

Only 4 cases occurred in this period. All had fever, and all had diarrhœa. Epistaxis and rose spots were absent. Gurgling was present in every case.

The following is the tabulated analyses of cases :

Total No. Cases 4.	No. Cases.	Per Cent.
Fever	4	100
Diarrhœa	4	100
Bloody stools.....	2	50
Delirium.....	1	25
Right iliac tenderness.....	2	50
Gurgling.....	4	100
Palpable spleen.....	2	50
Bronchitis.....	2	50
Chill.....	3	75
Sweating	3	75

The average number of symptoms per case of this group was 6.75 per cent.

2. *Childhood, (1-5 years).*

19 cases occurred in this period, all of which had fever. The symptom least frequently noted was bloody stools.

The following is the tabulated analyses of cases.

Total No. Cases 19.	No. Cases.	Per Cent.
Fever	19	100.
Epistaxis	9	47.37
Rose spots.....	7	36.84
Diarrhœa	15	78.95
Bloody stools.....	2	10.53
Delirium.....	10	52.63
Right iliac tenderness.....	13	68.42
Gurgling.	16	84.21
Palpable spleen	3	15.79
Bronchitis.....	10	52.63
Chill	13	68.42
Sweating.....	11	57.90

The average number of symptoms per case of this group was 6.74 per cent.

3. *Youth, (5-15 years).*

290 cases occurred in this period, all of whom had fever. The symptom least frequently noted was bloody stools.

The following is the tabulated analysis of cases :

Total No. Cases 290.	No. Cases.	Per Cent.
Fever	290	100.
Epistaxis	122	42.07
Rose spots.....	111	38.28
Diarrhœa	168	57.93
Bloody stools	8	2.76

Total No. Cases 290.	No. Cases.	Per Cent.
Delirium.....	107	36.90
Right iliac tenderness.....	209	72.07
Gurgling.....	228	78.62
Palpable spleen.....	92	31.72
Bronchitis.....	142	48.97
Chill.....	178	61.38
Sweating.....	174	60.00

The average number of symptoms per case of this group was 6.31 per cent.

4. *Adult Life, (15-50 years).*

637 cases occurred in this group. 632 of whom had fever, and 5 were afebrile. The symptom least frequently noted was bloody stools.

The following is the tabulated analyses of the cases :

Total No. Cases 637.	No. Cases.	Per Cent.
Fever.....	632	99.22
Epistaxis.....	240	37.68
Rose spots.....	262	41.13
Diarrhœa.....	465	73.00
Bloody stools.....	47	7.38
Delirium.....	215	33.75
Right iliac tenderness.....	545	85.56
Gurgling.....	611	95.92
Palpable spleen.....	270	42.39
Bronchitis.....	395	62.01
Chill.....	578	90.74
Sweating.....	593	93.09

The average number of symptoms per case of this group was 7.62 per cent.

5. *Age of Involution, (50 + years).*

64 cases occurred in this group. 61 of whom had fever, and 3 were afebrile. The symptom least frequently noted was bloody stools.

The following is the tabulated analyses of the cases :

Total No. of Cases 64.	No. Cases.	Per Cent.
Fever.....	61	95.31
Epistaxis.....	10	15.62
Rose spots.....	13	20.31
Diarrhœa.....	28	43.75
Bloody stools.....	1	1.56
Delirium.....	12	18.75
Right iliac tenderness.....	34	53.13
Gurgling.....	41	64.06
Palpable spleen.....	21	32.81
Bronchitis.....	32	50.00
Chill.....	47	73.44
Sweating.....	38	59.38

The average number of symptoms per case of this group was 5.26 per cent.

Sudoral Forms—Among the sudoral forms, all cases with chill, fever, and sweating were included. There were 691 sudoral cases, or 56.18 per cent. of all the cases tabulated.

Chill, fever and sweating alone.....	20
Chill, fever and sweating with other symptoms.....	671
Total.....	691

AFEBRILE CASES.

	Total No. Cases.	No. Afebrile.	Per Cent. Afebrile.
All ages.....	1,114	8	0.72
15-50	637	5	0.98
50 and over.....	64	3	4.53
All ages under 50.....	1,050	5	0.48

As the table shows, a comparatively high percentage of cases over 50 were afebrile 4.53 per cent. in comparison with 0.48 per cent. under 50.

The tendency to hemorrhage diminished likewise in this series with advancing age.

MELÆNA.

0-1	50.00%	4 cases.
1-5	10.53%	19 cases.
5-15	2.76%	290 cases.
15-50	7.38%	637 cases.
50+	1.56%	64 cases.

The following table gives a combined analyses of symptomatology according to age.

PER CENT. OF SYMPTOMS IN EACH AGE GROUP.

	Fever.	Epis- taxis.	Rose Spots.	Diarrhoea.	Bloody Stools.	Delir- ium.	Right Il. Tender- ness.	Gur- gling.	Pal. Spleen	Bron- chitis.	Chill.	Sweat- ing.
All ages.....	99.28	31.78	32.76	54.31	4.31	28.81	62.75	65.17	29.17	47.39	64.36	67.95
0-1.....	100.00	.....	.....	100.00	50.00	25.00	50.00	100.00	50.00	50.00	75.00	75.00
1-5.....	100.00	47.37	36.84	78.95	10.53	52.63	68.42	84.21	15.79	52.63	68.42	57.90
5-15.....	100.00	42.07	38.28	57.93	2.76	36.90	72.07	78.62	31.72	48.97	61.38	60.00
15-50.....	99.22	37.68	41.13	73.00	7.38	33.75	85.56	95.92	42.39	62.01	90.74	93.09
50+	95.31	15.62	20.31	43.75	1.56	18.75	53.13	64.06	32.81	50.00	73.44	59.38

The average number of symptoms per case for the whole group was a little over 6.

SYMPTOMS BY AGES IN THE FREQUENCY OF THEIR OCCURRENCE.

	Fever.	Epis- taxis.	Rose Spots.	Diarrhoea.	Bloody Stools.	Delir- ium.	Right Il. Tender- ness.	Gur- gling.	Pal. Spleen	Bron- chitis.	Chill.	Sweat- ing.
All ages.....	1	9	8	6	12	11	5	3	10	7	4	2
0-1.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1-5.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5-15.....	1	8	9	6	12	10	3	2	11	7	4	5
15-50.....	1	10	9	6	12	11	5	2	8	7	4	3
50+	1	11	9	7	12	10	5	3	8	6	2	4

ORIGINAL ARTICLES				PAGES	
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
199	200	201	202	203	204
205	206	207	208	209	210
211	212	213	214	215	216
217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300
301	302	303	304	305	306
307	308	309	310	311	312
313	314	315	316	317	318
319	320	321	322	323	324
325	326	327	328	329	330
331	332	333	334	335	336
337	338	339	340	341	342
343	344	345	346	347	348
349	350	351	352	353	354
355	356	357	358	359	360
361	362	363	364	365	366
367	368	369	370	371	372
373	374	375	376	377	378
379	380	381	382	383	384
385	386	387	388	389	390
391	392	393	394	395	396
397	398	399	400	401	402
403	404	405	406	407	408
409	410	411	412	413	414
415	416	417	418	419	420
421	422	423	424	425	426
427	428	429	430	431	432
433	434	435	436	437	438
439	440	441	442	443	444
445	446	447	448	449	450
451	452	453	454	455	456
457	458	459	460	461	462
463	464	465	466	467	468
469	470	471	472	473	474
475	476	477	478	479	480
481	482	483	484	485	486
487	488	489	490	491	492
493	494	495	496	497	498
499	500	501	502	503	504
505	506	507	508	509	510
511	512	513	514	515	516
517	518	519	520	521	522
523	524	525	526	527	528
529	530	531	532	533	534
535	536	537	538	539	540
541	542	543	544	545	546
547	548	549	550	551	552
553	554	555	556	557	558
559	560	561	562	563	564
565	566	567	568	569	570
571	572	573	574	575	576
577	578	579	580	581	582
583	584	585	586	587	588
589	590	591	592	593	594
595	596	597	598	599	600
601	602	603	604	605	606
607	608	609	610	611	612
613	614	615	616	617	618
619	620	621	622	623	624
625	626	627	628	629	630
631	632	633	634	635	636
637	638	639	640	641	642
643	644	645	646	647	648
649	650	651	652	653	654
655	656	657	658	659	660
661	662	663	664	665	666
667	668	669	670	671	672
673	674	675	676	677	678
679	680	681	682	683	684
685	686	687	688	689	690
691	692	693	694	695	696
697	698	699	700	701	702
703	704	705	706	707	708
709	710	711	712	713	714
715	716	717	718	719	720
721	722	723	724	725	726
727	728	729	730	731	732
733	734	735	736	737	738
739	740	741	742	743	744
745	746	747	748	749	750
751	752	753	754	755	756
757	758	759	760	761	762
763	764	765	766	767	768
769	770	771	772	773	774
775	776	777	778	779	780
781	782	783	784	785	786
787	788	789	790	791	792
793	794	795	796	797	798
799	800	801	802	803	804
805	806	807	808	809	810
811	812	813	814	815	816
817	818	819	820	821	822
823	824	825	826	827	828
829	830	831	832	833	834
835	836	837	838	839	840
841	842	843	844	845	846
847	848	849	850	851	852
853	854	855	856	857	858
859	860	861	862	863	864
865	866	867	868	869	870
871	872	873	874	875	876
877	878	879	880	881	882
883	884	885	886	887	888
889	890	891	892	893	894
895	896	897	898	899	900
901	902	903	904	905	906
907	908	909	910	911	912
913	914	915	916	917	918
919	920	921	922	923	924
925	926	927	928	929	930
931	932	933	934	935	936
937	938	939	940	941	942
943	944	945	946	947	948
949	950	951	952	953	954
955	956	957	958	959	960
961	962	963	964	965	966
967	968	969	970	971	972
973	974	975	976	977	978
979	980	981	982	983	984
985	986	987	988	989	990
991	992	993	994	995	996
997	998	999	1000	1001	1002

TABLE A.—CONTINUED.
DEATHS IN MARYLAND, 1904, BY AGE, SEX, COLOR, MONTH AND CAUSE—RURAL DISTRICTS.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	CAUSES OF DEATH.	Male.	Female.	White.	Colored.	Total.	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 and over	Unknown				
3	8	5	2	2	2	2	2	3	1	4	4	50. Diabetes	13	24	31	6	37			3	5	2		1					1	2	3	4	5	6	4	1				
1												51. Goiter, Exophthalmic		1	1		1											1												
				1								52. Addison's Disease		1	2		2									1	1													
1	1	1					1	1			1	53. Leukemia	3	4	6	1	7																							
1		3	2	1	5				1	3	1	54. Anaemia, Chlorosis	13	6	15	4	19	2	4	1	2		1	1		1	1				1					1	1			
												55. Other General Diseases	1	2	3		3	2							1															
3		3	3	1	5		1	1	1	6	2	56. Alcoholism	23	3	24	2	26		1							2	5	7	2	2			4	1	1			1		
											1	57. Saturnism	1		1		1													1										
												58. Other Professional Intoxications																												
				1	1							59. Other Chronic Poisonings		2	3		3													2				1						
10							1	1	1			60. Encephalitis	1	3	1	3	4	2																						
2											1	61. Meningitis, Epidemic, Cerebro-Spinal	81	51	105	27	132	44	36	12	3	6	2	7	3	1	3	1	3	1	3	4	3	2			2			
24	35	40	43	31	29	35	33	26	29	25	22	62. Locomotor Ataxia	11	4	13	2	15		1	1																				
1	4	2	4	2	4	3	2	2	2	2	2	63. Other Diseases of the Spinal Cord	13	7	16	4	20		6																					
17	25	27	14	17	17	15	17	18	21	21	24	64. Cerebral Congestion and Hemorrhage	193	179	303	69	372	6	2																					
6	3	8	1	3	1	2	3	4	2	3	2	65. Cerebral Softening	15	13	24	4	28		1																					
1	5	8	3	5	2	8	7	3	12	3		66. Paralysis without Specified Cause	125	108	156	77	233	1																						
3	5	4	1	2	1	4	2	4	2			67. Paralysis, General	26	12	36	2	38																							
2	1			1	1	1	2	1	1	2	3	68. Other Forms of Mental Alienation	29	31	57	3	60																							
9	17	11	13	13	13	21	9	10	9	10	6	69. Epilepsy	13	15	21	7	28																							
1	1	3	1	3	2	4	3	4	1	1	1	70. Eclampsia (non-puerperal)	6	9	6	9	15	124	20																					
												71. Convulsions of Children	80	65	83	62	145																							
												72. Tetanus	12	13	15	10	25	15																						
												73. Chorea																												
												74. Other Diseases of the Nervous System	16	20	30	6	36	3	2	1																				
												75. Diseases of the Eye and its Access																												
												76. Diseases of the Ear	4	1	3	2	5	3																						
												77. Pericarditis	1	4	5		5		1																					
												78. Endocarditis, Acute	3	5	5	3	8	2																						
												79. Organic Diseases of the Heart	317	286	443	160	603	11	4	8	12	12	9	9	18	12	21	22	32	45	77	74	96	79	56	6				
												80. Angina Pectoris	23	15	35	3	38																							
												81. Affections of the Arteries (Atheroma Aneurism, etc.)	16	5	17	4	21																							
												82. Embolus and Thrombosis	1	3	3	1	4																							
												83. Affections of the Veins	1		1	1																								
												84. Affections of the Lymphatic System	1	1			1																							
												85. Hemorrhages	15	8	12	11	23	9	3	3																				
												86. Other Affections of the Circulatory System																												
												87. Diseases of the Nasal Passes	2	4	4	2	6	1	4																					
												88. Affections of the Larynx																												
												89. Affections of the Thyroid Body																												
												90. Bronchitis, Acute	71	76	87	60	147	65	33	2																				
												91. Bronchitis, Chronic	15	25	33	7	40	2	3																					
												92. Broncho-Pneumonia	62	69	100	31	131	58	40	6	4																			
												93. Pneumonia	371	291	475	187	662	136	86	25	12	15	16	19	29	22	21	21	27	37	40	43	39	37	35	2				
												94. Pleurisy	6	4	8	2	10																							
												95. Pulmonary Congestion and Apoplexy	29	22	43	8	51	17	7	1																				
												96. Gangrene of the Lung																												
												97. Asthma	9	6	10	5	15																							
												98. Pulmonary Emphysema	3		3		3																							

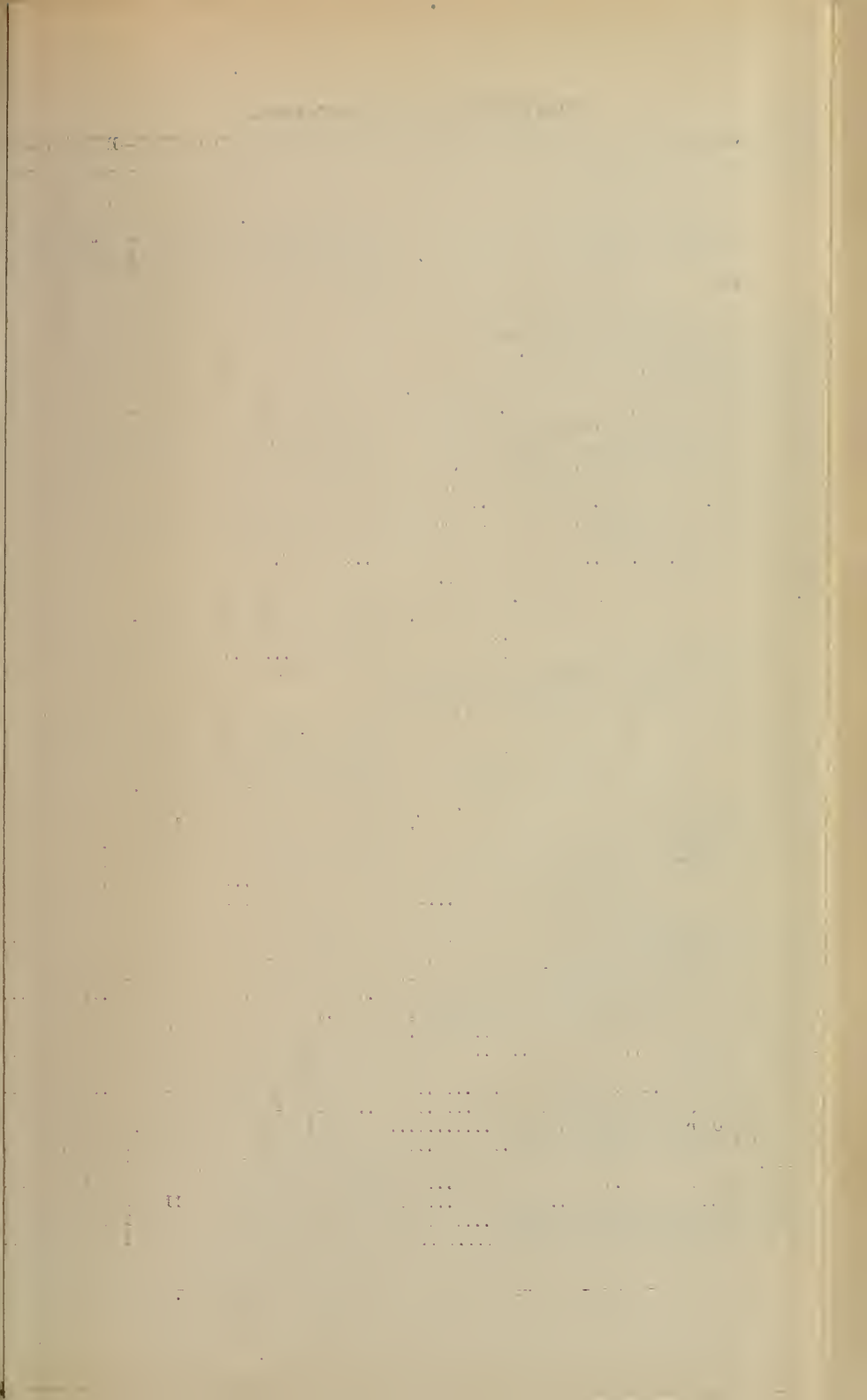
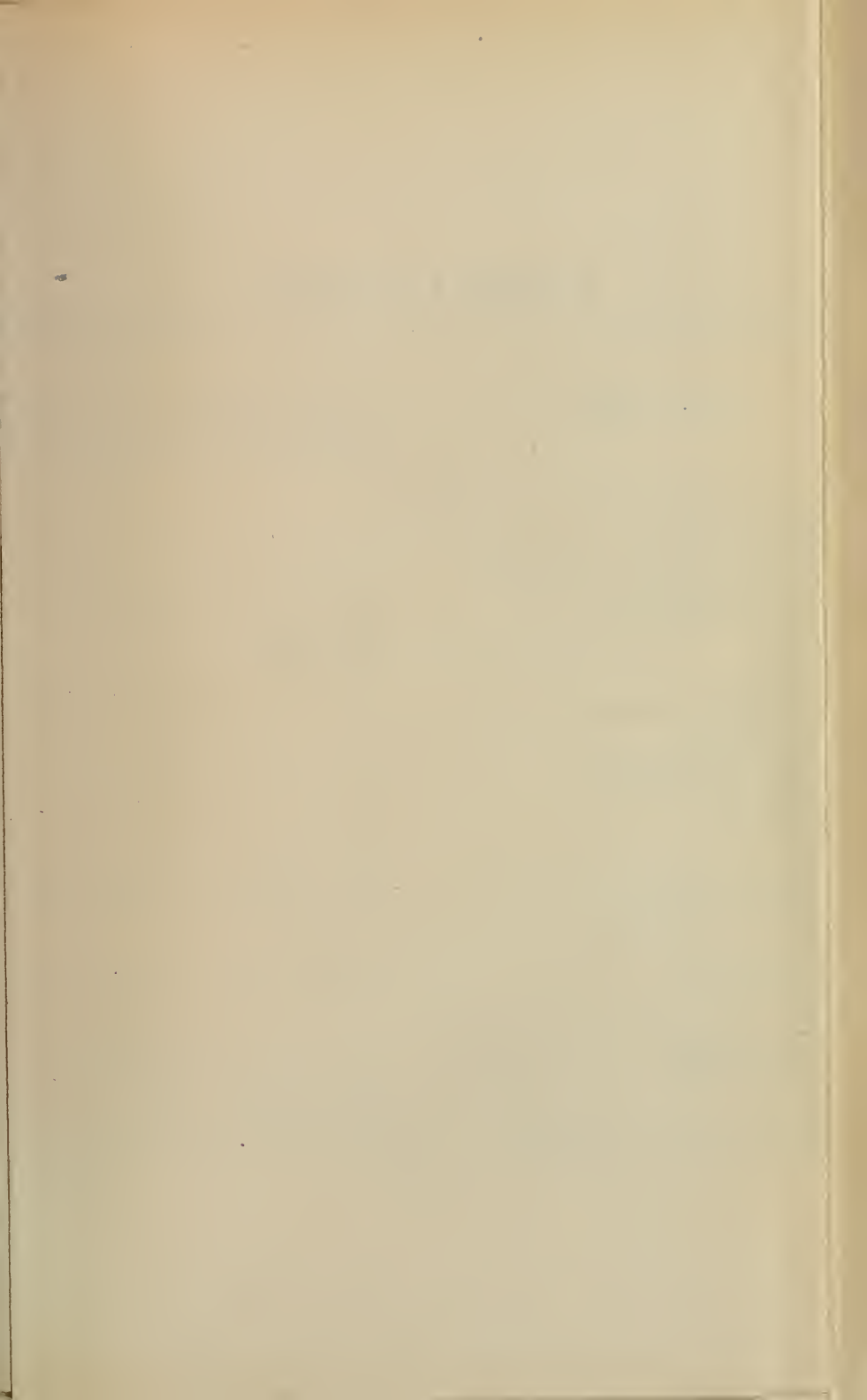


TABLE A.—CONTINUED.
DEATHS IN MARYLAND, 1904, BY AGE, SEX, COLOR, MONTH AND CAUSE—RURAL DISTRICTS.

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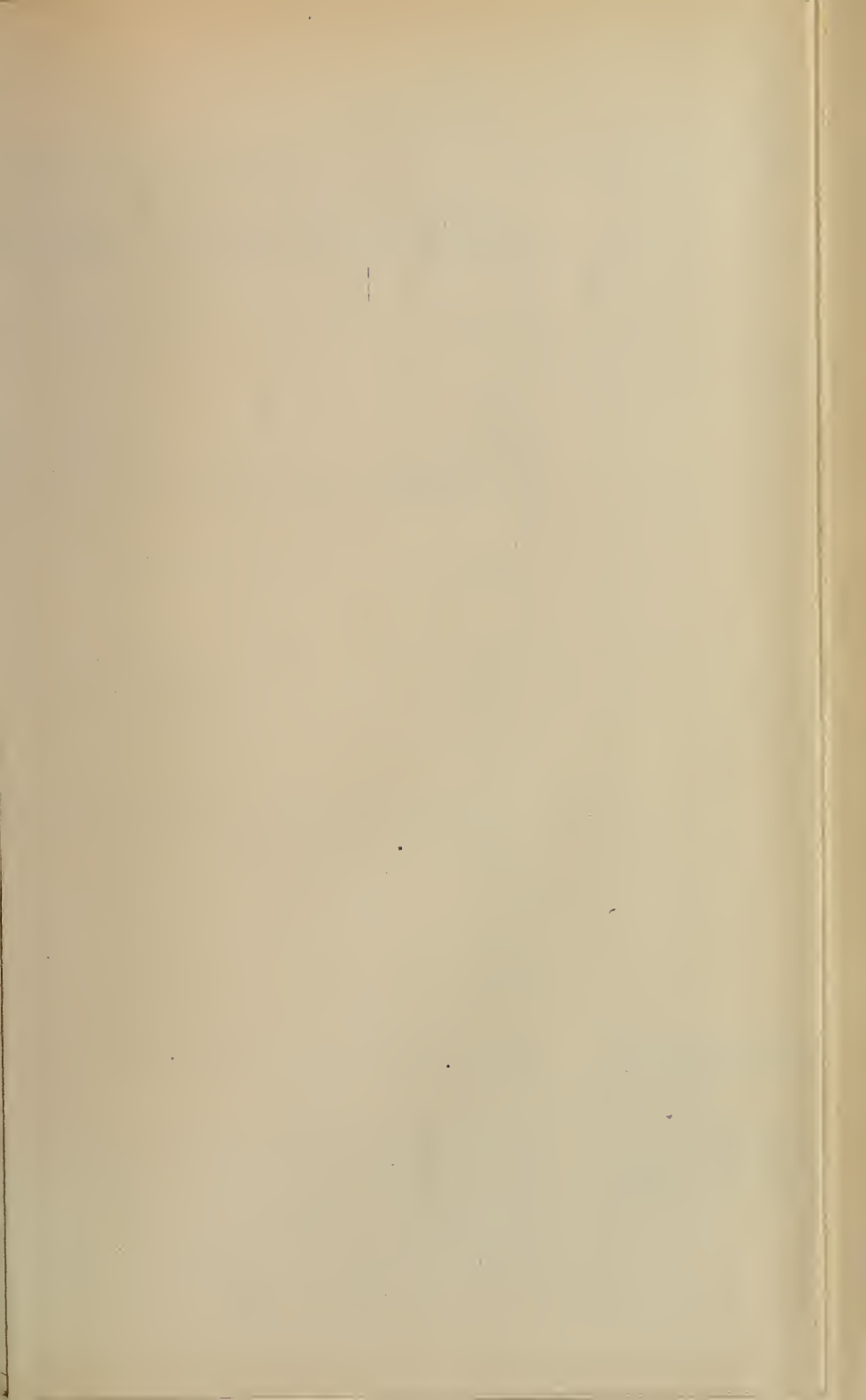
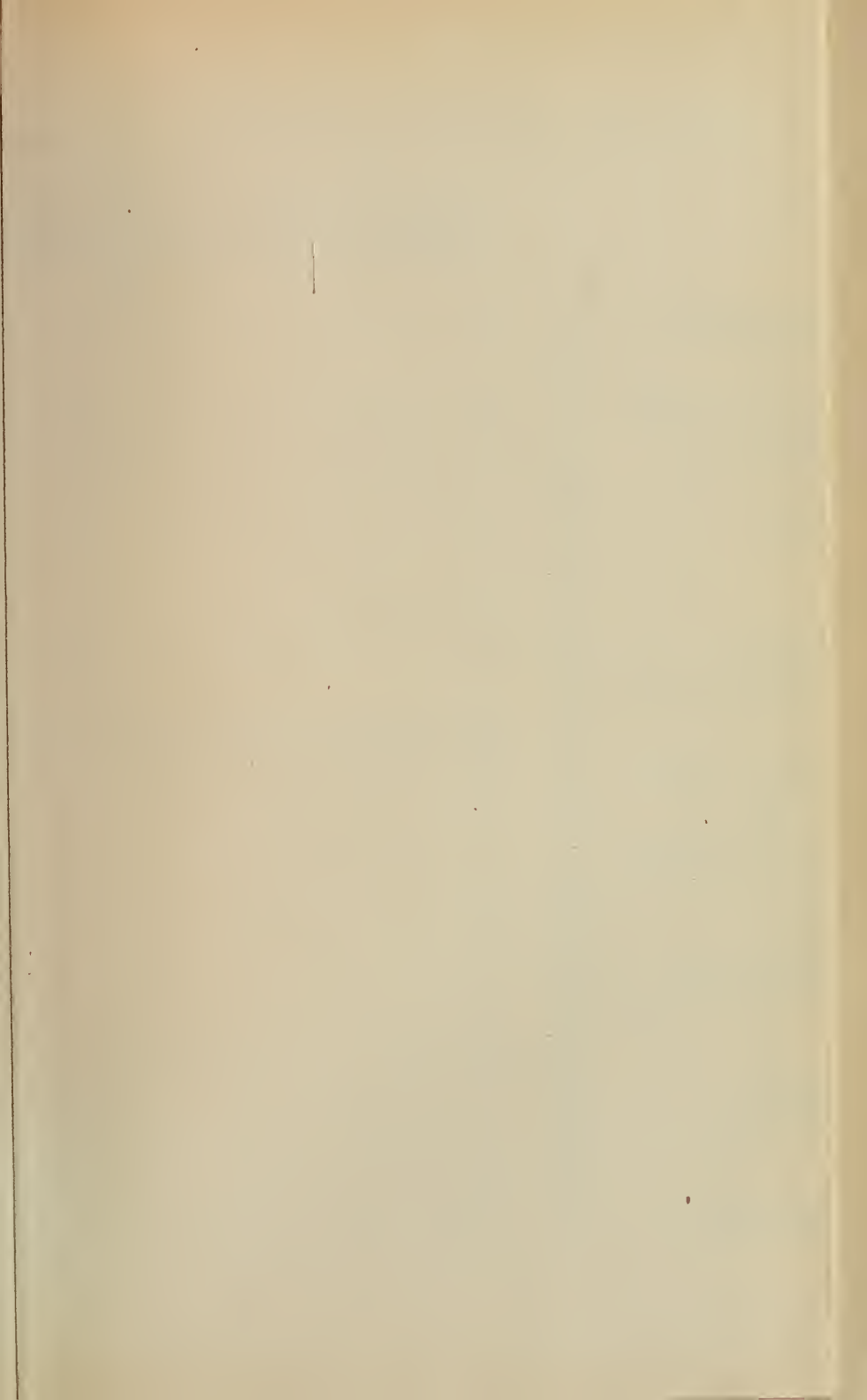


TABLE B.
DEATHS IN MARYLAND, 1904, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

[illegible]

TABLE B.—CONTINUED.
DEATHS IN MARYLAND, 1904, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

BALTIMORE EXCLUDED.					CAUSES OF DEATH.																																
Male.	Female.	White.	Colored.	Total.			Allegany.	Anne Arundel.	Baltimore.	Calvert.	Caroline.	Carroll.	Cecil.	Charles.	Dorchester.	Fredrick.	Garrett.	Hartford.	Howard.	Kent.	Montgomery.	Prince George.	Queen Anne.	Somerset.	St. Mary's.	Talbot.	Washington.	Wicomico.	Worcester.	Ratio.	City.	Per Cent.					
13	24	31	6	37	50.	Diabetes.....		1	6	1	3	3	6	2	1	1	1	2	1		1			2		1	2		2	57	0.46						
	1	1	2	1	51.	Gout, Exophthalmic.....							1								1								3	0.01							
4	4	2	1	7	52.	Addison's Disease.....																						2	0.01								
13	6	15	4	19	53.	Leukemia.....		1	1	1			1			1							1						10	0.08							
1	2	3	2	3	54.	Anaemia, Chlorosis.....		1	1	1			1			1	1	2	2	3	1	1					2	47	0.27								
23	3	24	2	26	55.	Other General Diseases.....		4	1	7	1		3			1	1	1			1	1		1		1	2	1	41	0.01							
1		1		1	56.	Alcoholism.....																							1	0.0098							
	2	3		5	57.	Saturnism.....										1													1	0.0049							
1	2	3		5	58.	Other Professional Intoxications.....																							1	0.01							
81	51	105	27	132	59.	Other Chronic Poisonings.....		1	2				1							1									1	0.03							
1	1	2		3	60.	Encephalitis.....																															
11	4	13	2	15	61.	Meningitis, Simple.....	1.37	15	9	32			1	6	2	4	8	6	5	6	1	6	2	4	4	3	2	13	1	2	146						
13	7	16	4	20	62.	Meningitis, Epidemic, Cerebro-Spinal.....		1											1																		
103	179	303	69	372	63.	Locomotor Ataxia.....		1	1	3			1			1		1	1	1	1	1		1		2	1	3	1	17							
15	13	24	4	28	64.	Other Diseases of the Spinal Cord.....							2	2		1	2							2					2	0.15							
125	108	156	77	233	65.	Cerebral Congestion and Hemorrhage.....		30	10	84	3	12	17	22	3	8	36	3	15	11	11	12	18	10	14	4	11	22	7	381							
26	23	31	36	60	66.	Cerebral Softening.....		1		9			1	2		3	1				1	1		2	3	1	1		2	24							
13	15	21	7	28	67.	Paralysis without Specified Cause.....		7	13	35	4	2	17	17	6	5	21	1	17	4	12	8	5	10	3	3	12	26	1	4	159						
6	9	6	9	15	68.	Paralysis, General.....		6	1	10			10	5		3	3		1		2	1		2		1	2		1	32							
13	15	21	7	28	69.	Other Forms of Mental Alienation.....		1	1	10			5	1		1	3		1	1	2		1	1		1	1		1	12							
6	9	6	9	15	70.	Epilepsy.....		3	1	2			1	1						3		2								5							
80	65	83	62	145	71.	Eclampsia (non-puerperal).....		9	12	26	3		6	9	4	2	6	5	6	10	4	7	11	3		2	2	12	5	1	135						
12	13	15	10	25	72.	Convulsions of Children.....		1	8	5	1			1	1						1			1		2	1		1	3	24						
					73.	Tetanus.....													1																		
16	20	30	6	36	74.	Chorea.....		8	4		1	4				2	3		1	3	1	1	1				2	3	1	34							
					75.	Other Diseases of the Nervous System.....																															
4	1	3	2	5	76.	Diseases of the Eye and its Access.																															
1	4	5		5	77.	Diseases of the Ear.....																															
3	5	5	3	8	78.	Pericarditis.....			1												1																
317	286	443	160	603	79.	Endocarditis, Acute.....		45	31	98	6	8	33	30	1	1	1				1	1			1					1	8						
23	15	35	3	38	80.	Organic Diseases of the Heart.....		4	4				4	2		2	4		1		1																
16	5	17	4	21	81.	Angina Pectoris.....		3	1	7			1	1																							
1	3	3	1	4	82.	Affections of the Arteries (Atheroma Aneurism, etc.).																															
1	1	1		2	83.	Affections of the Veins.....																															
15	8	12	11	23	84.	Affections of the Lymphatic System.....																															
					85.	Hemorrhages.....																															
					86.	Other Affections of the Circulatory System.....		3	1	3			1	1	2	1	3			2	1			2													
2	4	4	2	6	87.	Diseases of the Nasal Passes.....																															
					88.	Affections of the Larynx.....		1		1		1																									
					89.	Affections of the Thyroid Body.....																															
71	76	87	60	147	90.	Bronchitis, Acute.....		17	14	19	5	1	7	4	5	7	8	5	4	2	9		6	5	5	1	6	9	4	4	124						
15	25	33	7	40	91.	Bronchitis, Chronic.....		4	4	12	1		1			1	3		2	2	1	3	2	1		1		2	1	163							
32	29	100	31	131	92.	Broncho-Pneumonia.....		24	3	26	2		1	8	1	3	10	2	1	2		10	5	2	5	2	4	17	6	240							
6	6	4	8	16	93.	Pneumonia.....		76	30	116	11	12	34	29	11	19	28	12	30	16	24	32	40	20	26	11	14	15	6	15	851						
29	22	43	8	51	94.	Pleurisy.....		1		3			1			1																					
					95.	Pulmonary Congestion and Apoplexy.....		1	7	5	2		6	3		1			2	2	3		1	2	3												
9	6	10	5	15	96.	Gangrene of the Lung.....		5		1																											
3		3		3	97.	Asthma.....		1																													
					98.	Pulmonary Emphysema.....																															



DEATHS IN MARYLAND, 1904, BY CAUSES, SEX, COLOR, SEASON AND COUNTY.

Baltimore Excluded.					CAUSES OF DEATH.																			Per Cent.							
Male.	Female.	White.	Colored.	Total.																											
11	5	11	5	16	99. Other Diseases of the Respiratory Apparatus.	1	1	3															37	0.26							
9	8	5	12	17	100. Affections of the Mouth and its Adnexa.																		1	0.08							
2		1			101. Affections of the Pharynx.																		1	0.0098							
5	1	6	3	11	102. Affections of the Esophagus.																		1	0.10							
74	69	112	31	143	103. Ulcer of the Stomach.	10	7	19	2	5	8	9	3	7	11	1							3	1.62							
320	249	416	159	575	104. Other Affections of the Stomach (Cancer excepted).	46	83	89	10	7	14	10	15	33	23	7	5	5	4	2	1	4	5	3	6.12						
2	1	2	1	3	105a. Diarrhœa and Enteritis (under two years).																			0.81							
45	48	76	17	93	105b. Diarrhœa and Enteritis, Chronic.																			0.81							
					106a. Diarrhœa and Enteritis (two years and over).	7	8	13	2	1	7	2	1	1	5	2	6	4	4	2	7	1	5	1	0.01						
					107. Intestinal Parasites.																			2	0.0098						
31	24	42	13	55	108. Hernias; Intestinal Obstructions.	3	2	13	3	1	3	2	1	4	3									68	0.60						
10	4	11	3	14	109. Other Affections of the Intestines.	1		2				2	1	1										1	0.18						
					110. Icterus Gravis.																			3	0.01						
	1	1			111. Tumors, Hydatid of the Liver.			1																	0.0049						
29	9	28	10	38	112. Cirrhosis of the Liver.	2	1	8	2															2	0.53						
2	7	7	2	9	113. Biliary Calculi.							1												4	0.12						
12	11	16	7	23	114. Other Affections of the Liver.	1	2	1	1			1	1											3	0.42						
					115. Affections of the Spleen.																			2	0.0098						
15	32	36	11	47	116. Peritonitis, Simple (Puerperal excepted).	2	4	8				3	1											7	0.40						
					117. Other Affections of the Digestive Apparatus (Cancer and Tubercle excepted).																				2	0.01					
2	1	2		2	118. Appendicitis and Abscess of the Iliac Fossa.	5	2	6					1	2											77	0.51					
21	7	22	6	28	119. Nephritis, Acute.	9	2	12																	75	0.61					
276	164	303	138	441	120. Bright's Disease.	25	36	78	5	6	17	16	10	18	44	6	15	14	17	19	22	2	14	14	20	5	8	749	5.84		
3	3	3		3	121. Other Diseases of the Kidneys and their Adnexa.			1																				28	0.15		
3	3	3		3	122. Ulcer of the Urinary Tract.																							1	0.04		
12	4	15	3	18	123. Diseases of the Bladder.	2	1	3		1				1	1									4	1	1		16	0.16		
2	2				124. Diseases of the Urethra, Urinary Abscess, etc.	1				1																	7	0.04			
15		12	3	15	125. Diseases of the Prostate.	1		2	1	1	1														1	1	1	2	20	0.17	
					126. Nonvenereal Diseases of the Male Genital Organs.																										
	1	1		1	127. Metritis.			1																				5	0.02		
	2	1	1	2	128. Hemorrhage, Uterine (non-puerperal).																						1	0.01			
	3	1	2	3	129. Tumor, Uterine (non-cancerous).				1																		20	6.11			
					130. Other Diseases of the Uterus.																							8	0.03		
	4	3	1	4	131. Cysts and other Tumors of the Ovary.																										
	2	2		2	132. Other Diseases of the Female Genital Organs.	2		1																					7	0.05	
					133. Nonvenereal Diseases of the Breast (Cancer excepted).																						1	17	0.49		
	9	7	2	9	134. Accidents of Pregnancy.																							1	0.0098		
	9	6	3	9	135. Hemorrhage, Puerperal.	2																							13	0.10	
	5	3	2	5	136. Other Accidents of Labor.		2	1		1																			11	0.09	
31	20	11	31	31	137. Septicæmia, Puerperal.	3	2	3		1	2	3	2	4	4	1													59	0.44	
23	15	8	23	33	138. Albuminuria and Puerperal Eclampsia.	3	3	1	1	1																		1	17	0.19	
	4	3	1	4	139. Phlegmasia Alba Dolens, Puerperal.					1	1																			0.01	
	21	14	7	21	140. Other Puerperal Accidents, Sudden Death			5																						0.10	
12	5	15	2	17	142. Gangrene.	2		2	1		2	3	1	1	1														24	0.20	
6	5	3	1	4	143. Furuncle (Carbuncle)		1																							2	0.02
6	8	3	11	13	144. Abscess, Warts of the Skin.																										0.04
2	1	3		3	145d. Other Diseases of the Skin and its Adnexa.	3							1	2	1	1	2												12	0.11	
5	3	5	3	8	146. Affections of the Bones (non-tuberculous).	2		1																						3	0.15

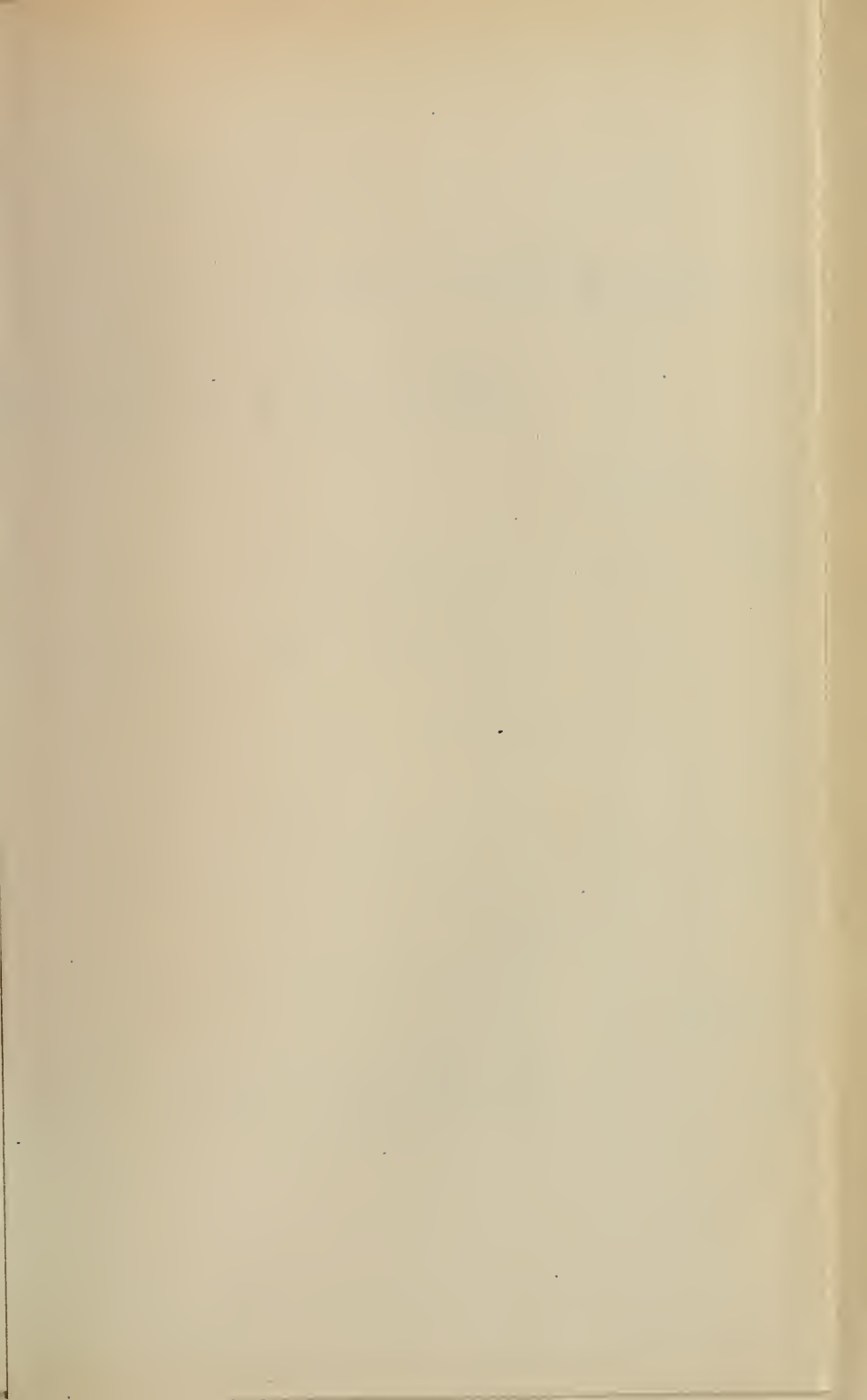




TABLE C.

DEATHS IN MARYLAND, IN 1904, BY COUNTIES, MONTHS, COLOR AND AGE.

COUNTIES.	Per cent.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Male.	Female.	White.	Colored.	Total.	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.
Allegany.....	4.13	76	84	82	90	69	60	68	74	58	56	64	61	474	368	787	55	842	192	85	38	16	43	51	34	34	39	22	29	38	27	30	41	46	3
Anne Arundel.....	3.03	47	47	48	54	48	66	97	70	49	27	28	36	325	292	330	287	617	188	61	20	12	23	30	19	26	31	12	26	19	23	28	23	28	2
Baltimore.....	7.87	127	157	179	133	115	118	164	158	101	130	104	117	875	728	1,373	230	1,603	287	116	34	32	58	56	62	70	56	84	66	73	86	88	97	106	9
Calvert.....	0.75	11	18	24	17	7	6	11	16	10	10	10	12	78	74	64	88	152	40	6	5	6	7	6	5	6	2	7	4	3	5	9	11	10	
Caroline.....	0.72	17	20	15	14	7	11	11	15	8	10	11	9	73	75	92	56	148	28	11	4	2	4	10	8	4	2	6		7	7	13	11	11	
Carroll.....	2.18	55	53	47	35	30	26	31	44	27	29	40	28	223	222	403	42	445	61	20	6	2	8	12	15	14	10	14	12	25	18	35	46	39	5
Cecil.....	1.82	37	40	49	32	22	23	30	40	24	29	19	27	204	168	283	89	372	54	32	11	7	18	12	10	12	14	10	12	11	22	24	27	26	1
Charles.....	1.22	31	21	21	21	21	13	25	26	14	15	12	30	129	121	88	162	250	59	14	7	13	9	11	14	14	4	7	7	7	9	14	14	11	1
Dorchester.....	1.52	25	25	17	22	25	19	34	34	29	38	30	22	158	152	170	140	310	73	28	13	6	13	21	11	15	6	5	12	12	17	12	13	19	1
Frederick.....	3.31	58	62	68	57	58	53	64	61	40	55	41	384	291	540	135	675	139	37	91	19	20	30	15	15	24	13	15	25	28	40	52	52	4	1
Garrett.....	0.85	17	14	17	17	17	6	15	18	16	11	14	11	99	74	169	4	173	33	21	5	5	4	7	10	3	8	6	2	11	9	6	3	10	1
Harford.....	1.75	35	31	44	30	25	18	24	26	36	28	33	28	177	181	261	97	358	51	23	9	4	8	12	18	17	15	13	13	13	17	24	19	28	2
Howard.....	1.17	21	22	25	25	28	16	18	24	14	12	20	14	122	117	155	84	239	53	20	5	6	4	12	11	11	4	9	4	7	9	12	15	15	1
Kent.....	1.53	22	31	27	27	28	29	27	39	28	26	12	16	165	147	141	171	312	71	26	12	14	20	10	6	6	11	7	11	10	14	16	21	17	2
Montgomery.....	1.67	30	28	43	24	23	30	36	44	25	34	17	17	181	160	195	146	341	90	21	8	7	12	21	7	13	12	11	3	19	9	19	21	23	1
Prince George's.....	2.39	41	50	44	29	41	23	54	60	30	47	37	33	250	239	242	247	489	126	35	12	15	19	28	21	16	11	17	9	13	24	33	28	35	1
Queen Anne's.....	1.41	20	28	36	23	23	21	20	46	13	19	18	21	143	145	146	142	288	68	22	9	12	11	12	8	6	9	11	10	7	15	17	11	16	2
Somerset.....	1.50	25	34	23	37	19	22	27	27	27	25	21	20	165	142	175	132	307	54	24	7	4	17	16	8	14	9	12	10	16	12	18	18	15	2
St. Mary's.....	0.76	8	15	13	13	10	10	12	19	13	14	16	7	87	69	79	74	156	19	15	3	3	9	8	8	5	6	6	4	4	10	10	7	17	
Talbot.....	1.35	23	24	33	19	23	22	23	23	23	18	25	22	21	131	145	144	132	276	44	28	4	4	15	5	15	10	5	5	15	11	17	21	22	5
Washington.....	3.33	89	69	89	70	56	47	43	48	50	34	38	45	353	325	611	67	678	149	59	21	10	16	18	32	22	19	17	19	25	22	43	48	44	4
Wicomico.....	1.04	15	9	14	5	12	12	35	24	32	11	20	20	113	96	143	66	209	58	25	9	4	9	12	6	4	5	1	7	6	8	13	11	4	
Worcester.....	1.43	23	24	37	23	26	26	20	32	28	22	23	19	137	155	155	137	292	57	21	5	4	8	16	14	13	7	6	8	12	10	16	11	26	2
Baltimore city.....	53.15	962	1,023	1,076	898	869	754	1,071	921	804	773	795	872	5,654	5,164	8,096	2,722	10,818	3,155	257	149	339	987		986		1,090				1,203		1,034		
Total, rural districts.....	853	909	982	816	733	677	883	971	727	672	664	645	5,046	4,486	6,746	2,786	9,532	1,991	750	268	207	355	416	350	355	315	301	288	368	412	537	569	620	54	
Total, Maryland.....	1,815	1,932	2,058	1,714	1,602	1,431	1,654	1,892	1,531	1,445	1,459	1,517	10,790	9,650	14,842	5,508	20,350	5,896	525	356	694	1,753		1,656		1,679			1,899		2,309		2,246		

CONCLUSIONS.

The following conclusions are to be noted subject to the necessary limitations of the class of statistics.

1. Neither the symptom groups or individual symptoms are characteristic.

2. The presence of a paratyphoid group in Maryland.

Respectfully submitted,

MARSHALL LANGTON PRICE, M. D.

REPORT OF THE BACTERIOLOGIST.

BALTIMORE, January 1, 1905.

DR. JOHN S. FULTON,

Secretary of the State Board of Health.

Dear Sir: I hereby respectfully submit my report for the year of 1904. The tables appended show the work in detail, and its steady increase seems to demand an increase in the working force of the laboratory.

EXAMINATIONS FOR PHYSICIANS FOR THE DETECTION OF DISEASE
(January 1, 1904, to December 31, 1904, inclusive).

Table No. 1.

Examinations of blood for the typhoid reaction: Positive reactions, 313; negative reactions, 327; suspicious, 52; unsatisfactory, 2—total 694.

Examinations of blood for suspected malaria: Negative, 243 cases; unsatisfactory, 6 cases—total 249.

Examinations of sputum for tuberculosis: Tubercle bacilli present, 156; tubercle bacilli not present, 283; unsatisfactory, 3—total 442.

Examinations of suspected diphtheria: Positive cases, 147; negative cases, 904; suspicious, 3; unsatisfactory, 2—total 1,056.

Examinations of water, 159.

Food examinations, 5.

Examinations for the detection of rabies, 2.

Examinations of throats of school children for suspected diphtheria: Positive cases, 41; negative cases, 1,104—total 1,145.

TABLE No. 2.—TABULAR REPORT OF WATER EXAMINATIONS.

TAP, STREAM, WELL OR SPRING.	Date.	Colonies Per c.c.	Colon Bacillus.	Quality.
Bryan's pump, Govanstown.....	Jan. 22	500	None in 1 or 50 c.c.	Good
James L. Yagle, New Freedom, Pa., well.....	Feb. 16	3000	None in 1 or 50 c.c.	Bad—Too many bacteria
Mrs. James Hirst, Cambridge, well.....	Mar. 2	50	None in 1 or 50 c.c.	Good
Dr. S. H. Anderson, Woodwardville, spring, No. 1.....	Mar. 24	1200	None in 1 or 50 c.c.	Fair
Dr. S. H. Anderson, Woodwardville, spring, No. 2.....	Mar. 24	70	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 1, spring.....	April 4	20	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 2, reservoir.....	April 4	150	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 3, Haveland spring.....	April 4	3	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 4, Heckart's spring.....	April 4	50	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 5, spring below infirmary.....	April 4	300	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 7, tap from spring.....	April 4	60	None in 1 or 50 c.c.	Good
Tome Institute, Port Deposit, No. 8, ice from river.....	April 4	1350	None in 1 or 50 c.c.	Suspicious—Too many bacteria
George S. Stone, M.D., Baltimore county, well.....	April 11	150	Present in 50 c.c.	Bad—Atypical colon bacillus
M. A. Birely, No. 1, Thurmont, Eisonogh spring.....	April 25	6000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
M. A. Birely, No. 2, Thurmont, creek water.....	April 25	6000	Present in 50 c.c.	Bad
Chas. H. Brooke, M.D., Brooklyn, well, No. 1.....	April 25	10	None in 1 or 50 c.c.	Good
Chas. H. Brooke, M.D., Brooklyn, well, No. 2.....	April 25	100	None in 1 or 50 c.c.	Good
R. D. Hopkins, Station D, Carroll county, well.....	May 6	600	None in 1 or 50 c.c.	Suspicious—Too many bacteria
R. D. Hopkins, Beechfield avenue, well.....	May 6	5	None in 1 or 50 c.c.	Good
R. D. Hopkins, Beechfield avenue, house.....	May 6	36	None in 1 or 50 c.c.	Good
John Burgoon, Union Mills, No. 1, well.....	May 7	120	None in 1 or 50 c.c.	Good
John Burgoon, Union Mills, No. 2, well.....	May 7	900	None in 1 or 50 c.c.	Fair
John Burgoon, Union Mills, No. 3, well.....	May 7	150	None in 1 or 50 c.c.	Good
John Burgoon, Union Mills, No. 4, well.....	May 7	240	None in 1 or 50 c.c.	Good
John Burgoon, Union Mills, No. 5, well.....	May 7	110	None in 1 or 50 c.c.	Good

E. E. Wolff, M.D., Cambridge.	May	4	5000	None in 1 or 50 c.c.	Bad—Too many bacteria
H. A. Naylor, Fikesville, Berne well	May	19	3600	Present in 1 and 50 c.c.	Bad
Havre de Grace, No. 1, intake pike from river	June	3	1560	Present in 1 and 50 c.c.	Bad
Havre de Grace, No. 2, spigot in pump-house	June	3	10	None in 1 or 50 c.c.	Good
For record	June	2	.....	None in 1 or 50 c.c.	Good
Dr. Guy Steele, Cambridge, No. 1, well	June	4	2250	Present in 1 and 50 c.c.	Bad
Dr. Guy Steele, Cambridge, No. 2, well	June	4	5	Present in 50 c.c.	Bad
Dr. Guy Steele, Cambridge, No. 3, well	June	4	650	Present in 50 c.c.	Bad
Dr. Guy Steele, Cambridge, No. 4, well	June	4	3000	Present in 1 c.c.	Bad
Annapolis, No. 1, Dr. Marshall L. Price	June	11	450	None in 1 or 50 c.c.	Good
Annapolis, No. 2, Dr. Marshall L. Price	June	11	72	None in 1 or 50 c.c.	Good
Annapolis, No. 3, Dr. Marshall L. Price	June	11	120	None in 1 or 50 c.c.	Good
Annapolis, No. 4, Dr. Marshall L. Price	June	11	4800	Atypical in 1 and 50 c.c.	Bad
Annapolis, No. 5, Dr. Marshall L. Price	June	11	6000	Present in 1 c.c.	Bad
Annapolis, No. 6, Dr. Marshall L. Price	June	11	6000	Present in 1 c.c.	Bad
Annapolis, No. 7, Dr. Marshall L. Price	June	11	120	None in 1 or 50 c.c.	Good
Joseph Shepherd, Greenock, No. 1, spring	June	20	100	Present in 1 c.c.	Bad
Dr. Wm. J. Todd, pump, Falls road, Mt. Washington.	June	20	100	Present in 1 c.c.	Bad
Dr. Wm. J. Todd, pump, Falls road, Mt. Washington.	June	16	500	None in 1 or 50 c.c.	Fair
Dr. Guy W. Latimer, West River, well, No. 1	July	2	500	None in 1 or 50 c.c.	Fair
Dr. Guy W. Latimer, West River, spring, No. 2	July	21	1000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
Mrs. Leslie Owens, Perryville, spigot, No. 1	July	21	3000	Present in 1 and 50 c.c.	Bad
Ross Ward, Perryville, spigot, No. 2	July	21	4500	Present in 1 and 50 c.c.	Bad
Wm. E. Baker, Perryville, spigot, No. 3	July	21	1000	Present in 1 and 50 c.c.	Bad
Mrs. L. A. Taylor, Perryville, spigot, No. 4	July	21	3000	Present in 1 and 50 c.c.	Bad
M. Pope, Mt. Washington	July	21	300	None in 1 or 50 c.c.	Good
Richard Morton, Annapolis, No. 1, spigot in house	July	22	500	Present in 50 c.c.	Bad
Richard Morton, Annapolis, No. 2, spring	July	22	500	Present in 1 c.c.	Bad
F. Alan G. Murray, M.D., No. 1, Mt. Savage, spring	July	29	1320	Present in 50 c.c.	Bad
F. Alan G. Murray, M.D., No. 2, Mt. Savage, spring	July	29	4200	Present in 1 and 50 c.c.	Bad
F. Alan G. Murray, M.D., No. 3, Mt. Savage, spring	July	29	20000	Present in 1 and 50 c.c.	Bad
F. Alan G. Murray, M.D., No. 4, Mt. Savage, spring	July	29	5000	Present in 1 c.c.	Bad
F. Alan G. Murray, M.D., No. 5, Mt. Savage, spring	July	29	*	.....	.....
F. Alan G. Murray, M.D., No. 6, Mt. Savage, spring	July	29	2000	Present in 50 c.c.	Bad

* Bottle broken.

TABLE No. 2—CONTINUED.

TAP, STREAM, WELL OR SPRING.	Date.	Colonies Per c.c.	Colon Bacillus.	Quality.
Hospital—for record	July 29	150	Present in 1 and 50 c.c.	Bad
S—, for record	July 29	240	Present in 1 and 50 c.c.	Bad
D—, artesian well	Aug. 1	.....	None in 1 or 50 or 500 c.c.	Good
Dr. W. M. Nihiser, Keedysville, well	Aug. 8	.....	Atypical in 50 c.c.	Bad
A— C—, for record	Aug. 10	.....	None in 1 or 50 c.c.	Good
West Arlington Improvement Association, sewage plant, No. 1.	Aug. 18	240,000	Present in 1 and 50 c.c.	Bad
West Arlington Improvement Association, sewage plant, No. 2.	Aug. 18	660,000	Present in 1 and 50 c.c.	Bad
West Arlington Improvement Association, sewage plant, No. 3.	Aug. 18	408,000	Present in 1 and 50 c.c.	Bad
George H. Hocking, M.D., well, No. 1.	Aug. 19	420	None in 1 or 50 c.c.	Good
George H. Hocking, M.D., well, No. 2.	Aug. 19	540	None in 1 or 50 c.c.	Good
Chas. E. Shipley, Garrison P. O., well, No. 1	Aug. 19	48	None in 1 or 50 c.c.	Good
Chas. E. Shipley, Garrison P. O., well, No. 2	Aug. 19	2,400	None in 1 or 50 c.c.	Good
T. W. Byerly, M.D., Laurel, well, No. 1	Aug. 24	960	None in 1 or 50 c.c.	Fair—Too many bacteria
T. W. Byerly, M.D., Laurel, hydrant, No. 2	Aug. 24	2,580	None in 1 or 50 c.c.	Fair—Too many bacteria
T. W. Byerly, M.D., Laurel, well, No. 3	Aug. 24	30	None in 1 or 50 c.c.	Suspicious—Too many bacteria
T. W. Byerly, M.D., Laurel, well, No. 4	Aug. 24	2,400	Present in 1 c.c.	Good
Marshall L. Price, M.D., spring, Mt. Savage, No. 1.	Aug. 19	720	None in 1 or 50 c.c.*	Bad
Marshall L. Price, M.D., spring, Mt. Savage, No. 2.	Aug. 19	1	None in 1 or 50 c.c.	Good
Marshall L. Price, M.D., spring, Mt. Savage, No. 3.	Aug. 19	180	None in 1 or 50 c.c.	Good
Marshall L. Price, M.D., hydrant, Mt. Savage, No. 4	Aug. 19	16	None in 1 or 50 c.c.	Good
Marshall L. Price, M.D., spring, Mt. Savage, No. 5.	Aug. 19	960	None in 1 or 50 c.c.	Fair—Too many bacteria
Marshall L. Price, M.D., spring, Mt. Savage, No. 6.	Aug. 19	360	Present in 50 c.c.	Bad
Marshall L. Price, M.D., well, Mt. Savage, No. 7.	Aug. 19	16	None in 1 or 50 c.c.	Good
Marshall L. Price, M.D., kitchen hydrant, Mt. Savage, No. 8.	Aug. 19	3	None in 1 or 50 c.c.	Good

Marshall L. Price, M.D., foundry spring, Mt. Savage, No. 9.....	Aug. 19	1320	None in 1 or 50 c.c.	Fair—Too many bacteria
Marshall L. Price, M.D., hydrant, Mt. Savage, No. 10.....	Aug. 19	60	None in 1 or 50 c.c.	Good
George Smith, Rockland, Dr. H. A. Naylor, No. 1.	Aug. 25	1140	None in 1 or 50 c.c.	Fair—Too many bacteria
Wm. Beall, Arlington, well, Dr. H. A. Naylor, No. 2.	Aug. 25	720	None in 1 or 50 c.c.	Good
Wm. Beall, Arlington, well, Dr. H. A. Naylor, No. 3.	Aug. 25	1800	None in 1 or 50 c.c.	Fair—Too many bacteria
Chas. Wagand, Glyndon, sent in by Dr. T. R. Price.	Aug. 25	300	Present in 1 c.c.	Bad
Hydrant, Finley kitchen, Mt. Savage, Dr. M. L. Price, No. 1.....	Aug. 27	720	Present in 50 c.c.	Bad
Finley spring, Mt. Savage, Dr. M. L. Price, No. 2.	Aug. 27	480	Present in 1 c.c.	Bad
Milligan spring, Mt. Savage, Dr. M. L. Price, No. 3.	Aug. 27	240	Present in 50 c.c.	Bad
Milligan spring and cistern, Mt. Savage, Dr. Price, No. 4.....	Aug. 27	480	Present in 1 and 50 c.c.	Bad
Dr. E. H. Richardson, Bel Air, spigot, No. 1.....	Aug. 27	60	None in 1 or 50 c.c.	Good
Dr. E. H. Richardson, Bel Air, No. 2, pond.....	Aug. 31	720	Present in 1 and 50 c.c.	Bad
Robert Hopkins, Station D, spring.....	Sept. 3	9000	Present in 1 c.c.	Bad
Stream near Blythedale.....	Sept. 3	2400	Present in 50 c.c.	Bad
Dr. Taylor, Perryville, spigot.....	Sept. 3	5	None in 1 or 50 c.c.	Good
Bladen street extended, pump, Annapolis, No. 1....	Sept. 13	1500	None in 1 or 50 c.c.	Suspicious—Too many bacteria
Lincoln Place, pump, Annapolis, No. 2.....	Sept. 13	5000	Atypical in 50 c.c.	Bad
City tap, Annapolis, No. 3.....	Sept. 13	120	None in 1 or 50 c.c.	Good
Spa creek, Eastport bridge, Annapolis, No. 4.....	Sept. 13	4000	None in 1 or 50 c.c.	Bad—Too many bacteria
Boessel's drug store, pump and well, Annapolis, No. 5.	Sept. 13	1350	Present in 50 c.c.	Bad
Elliott's pump and well, Annapolis, No. 6.....	Sept. 13	750	None in 1 or 50 c.c.	Fair
Meade kitchen, pump and well, Annapolis, No. 7....	Sept. 13	420	Present in 1 and 50 c.c.	Bad
Johnson (Wilson), well and pump, Annapolis, No. 8.	Sept. 13	1200	Present in 1 and 50 c.c.	Bad
Clarke-Brown, pump and well, Annapolis, No. 9....	Sept. 13	4500	None in 1 or 50 c.c.	Bad—Too many bacteria
Atwell-Shores, pump and well, Annapolis, No. 10....	Sept. 13	12000	Present in 1 c.c.	Bad
Shores, well, Annapolis, No. 11.....	Sept. 13	6000	Present in 1 and 50 c.c.	Bad—Too many bacteria
Whittington, well, Annapolis, No. 12.....	Sept. 13	12000	None in 1 or 50 c.c.	Bad—Too many bacteria
Reilly, well, Annapolis, No. 13.....	Sept. 13	1500	None in 1 or 50 c.c.	Fair
Worthington, pump and well, Annapolis, No. 14....	Sept. 13	3000	Present in 1 and 50 c.c.	Bad
O'Connor, pump and well, Annapolis, No. 15.....	Sept. 13	1800	Present in 1 and 50 c.c.	Bad
J. M. Price, M.D., Frostburg, No. 1, artesian well.	Sept. 17	600	None in 1 or 50 c.c.	Good
J. M. Price, M.D., Frostburg, No. 2, artesian well.	Sept. 17	24000	None in 1 or 50 c.c.	Suspicious—Too many bacteria

TABLE NO. 2—CONTINUED.

TAP, STREAM, WELL OR SPRING.	Date.	Colonies Per c.c.	Colon Bacillus.	Quality.
J. M. Price, M.D., Frostburg, No. 3, surface water.	Sept. 17	12000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 4, reservoir.	Sept. 17	600	None in 1 or 50 c.c.	Fair
J. M. Price, M.D., Frostburg, No. 5, Witteig spring.	Sept. 17	5000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 6, Arnold spring.	Sept. 17	600	None in 1 or 50 c.c.	Fair
J. M. Price, M.D., Frostburg, No. 7, spring.	Sept. 17	2500	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 8, spring.	Sept. 17	3600	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 9, spring.	Sept. 17	3600	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 10, spring.	Sept. 17	3200	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 11, spring.	Sept. 17	5000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 12, Savage creek.	Sept. 17	500	Present in 50 c.c.	Bad
J. M. Price, M.D., Frostburg, No. 13, spring.	Sept. 17	5000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 14, spigot.	Sept. 17	1800	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 15, spigot.	Sept. 17	5000	Atypical in 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 16, spigot.	Sept. 17	12000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
J. M. Price, M.D., Frostburg, No. 17, melted ice.	Sept. 17	5	None in 1 or 50 c.c.	Good
G. Roger Myers, M.D., Hurlock, well.	Sept. 19	500	Present in 1 and 50 c.c.	Bad
Dr. H. A. Naylor, Pikesville, well, Mudge, No. 1.	Sept. 24	3000	Present in 1 and 50 c.c.	Bad
Dr. H. A. Naylor, Pikesville, well, Mudge, No. 2.	Sept. 24	2	None in 1 or 50 c.c.	Good
Dr. H. A. Naylor, Pikesville, well, Mudge, No. 3.	Sept. 24	3000	None in 1 or 50 c.c.	Bad—Too many bacteria
Dr. J. C. Clark, Springfield Hospital, No. 1, general supply.	Sept. 27	720	Present in 1 and 50 c.c.	Bad
Dr. J. C. Clark, Sykesville, artesian well, No. 2.	Sept. 27	8	Present in 50 c.c.	Bad
Dr. J. C. Clark, Sykesville, spring, No. 3.	Sept. 27	0	None in 1 or 50 c.c.	Good
Mr. Dorsey, Mt. Washington, well, Dr. H. A. Naylor, No. 1.	Oct. 3	1500	Present in 50 c.c.	Bad
Mr. Kempler, Mt. Washington, well, Dr. H. A. Naylor, No. 2.	Oct. 3	600	Present in 50 c.c.	Bad
F. F. Tyeryar, Sup. W. W., Frederick, reservoir, No. 1.	Oct. 14	3	None in 1 or 50 c.c.	Good

F. F. Tyeryar, Sup. W. W., Frederick, reservoir, No. 2	Oct. 14	12	None in 1 or 50 c.c.	Good
F. F. Tyeryar, Sup. W. W., Frederick, stream, No. 3.	Oct. 14	1500	Present in 1 or 50 c.c.	Bad
F. F. Tyeryar, Sup. W. W., Frederick, stream, No. 4.	Oct. 14	120	None in 1 or 50 c.c.	Good
F. F. Tyeryar, Sup. W. W., Frederick, stream, No. 5.	Oct. 14	900	None in 1 or 50 c.c.	Good
F. F. Tyeryar, Sup. W. W., Frederick, city hydrant, No. 6.	Oct. 14	10	None in 1 or 50 c.c.	Good
A. A. Piper's well, Glenarm, Dr. John S. Green....	Oct. 18	1200	None in 1 or 50 c.c.	Suspicious—Too many bacteria
Miss V. Hardy, Clarksville, well, Dr. T. B. Owings, No. 1.	Oct. 26	2000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
Wm. C. Brosenia, pipe from spring, Dr. T. B. Owings, No. 2.	Oct. 26	2500	Present in 1 c.c.	Bad
Wm. S. Myer, Pikesville, well, Dr. H. A. Naylor, No. 1.	Nov. 3	300	Present in 50 c.c.	Bad
Wm. S. Myers, Pikesville, spigot, Dr. H. A. Naylor, No. 2.	Nov. 3	360	Present in 50 c.c.	Bad
J. Hough Coffman, well, Patapsco Neck.	Nov. 9	12	None in 1 or 50 c.c.	Good
E. Glenn Perrin, Homeland, spigot, Dr. Geo. H. Hoeking, No. 1.	Nov. 14	20	Present in 1 c.c.	Bad
E. Glenn Perrin, Homeland, ice, Dr. Geo. H. Hoek- ing, No. 2.	Nov. 14	3000	Present in 50 c.c.	Bad
J. Lee Hopkins, M.D., Havre de Grace.	Nov. 15	.....	Present in 1 and 50 c.c.	Bad
Cambridge.	Nov. 23	3000	Not found in 1 or 50 c.c.	Suspicious—Too many bacteria
Wm. S. Myer, Pikesville, well, Dr. H. A. Naylor, No. 1.	Dec. 19	9000	None in 1 or 50 c.c.	Suspicious—Too many bacteria
Wm. S. Myer, Pikesville, spigot, Dr. H. A. Naylor, No. 2.	Dec. 19	540	None in 1 or 50 c.c.	Good
A. H. Onderdonk, St. James School, spigot, No. 1.	Dec. 19	2000	Present in 50 c.c.	Bad
A. H. Onderdonk, St. James School, spigot, No. 2.	Dec. 19	150	Present in 1 and 50 c.c.	Bad
A. H. Onderdonk, St. James School, spigot, Kemp Hall, No. 3.	Dec. 19	60	Present in 1 and 50 c.c.	Bad
A. H. Onderdonk, St. James School, spring, No. 4.	Dec. 19	6	Present in 1 and 50 c.c.	Bad
E. G. Perine, Indian Spring, Dr. Geo. H. Hoeking, Govaus.	Dec. 27	165	None in 1 or 50 c.c.	Good

TABLE No. 2a.—MILK.
BACTERIOLOGICAL EXAMINATION OF MILK.

SOURCE.	Date.	Colonies Per c.c.	Colon Bacillus.	Condition.
Tome Institute.....	April 4	45,000	None in $\frac{1}{1000}$ c.c.	Good
Sent in by Joseph Shepherd, Greenock.....	June 20	50,000	None in $\frac{1}{1000}$ c.c.	Good
Sent in by Joseph Shepherd, Greenock, No 2.....	June 20	50,000	None in $\frac{1}{1000}$ c.c.	Good
Sent in by Joseph Shepherd, Greenock, No 3.....	June 20	5,000	None in $\frac{1}{1000}$ c.c.	Good
Marked Charles Wagand, Glyndon, Dr. Price.....	Aug. 25	54,000	None in $\frac{1}{1000}$ c.c.	Good
Sample, marked Elliott, private supply.....	Sept. 13	1,200,000	None in $\frac{1}{1000}$ c.c.	Fair

Respectfully submitted,

WM. ROYAL STOKES, M. D., Bacteriologist.

INSPECTOR'S REPORT.

CONDEMNED AND TANKED—JANUARY.

Animals.

On December 9th two hogs having measles* at the Union Abattoir. Owner, Swift & Co.

On December 10th one lump-jaw cow at the Union Stock-yards. Owner, Henry Eckhardt. One bruised cow at the Union Stock Yards. Owner, Henry Eckhardt.

On December 11th one calf under weight, weighing 35 lbs., at the Union Abattoir. Owner, Lee Stern.

On December 15th one bruised sheep at the Union Stock Yards. Owner, Henry Eckhardt. One hog having cholera at the Union Abattoir. Owner, Bernheimer Bros.

On December 18th one bruised cow at the Union Abattoir. Owner, Chas. Thompson.

On December 31st three hogs having cholera at the Union Abattoir. Owner, Swift & Co.

FEBRUARY.

On January 13th one gangrenous hog at the Union Stock Yards. Owner, Swift & Co.

On January 14th one lump-jaw steer at the Union Stock Yards. Owner, Alex. Mooney.

On January 15th one bruised steer at the Union Abattoir. Owner, Myers & Hausman.

On January 16th one hog suffering with cholera at the Union Stock Yards. Owner, Swift & Co.

On February 11th one hog suffering with measles at the Union Abattoir. Owner, Swift & Co.

On February 9th one lump-jaw cow at the Union Stock Yards. Owner, Moses Atkinson. One lump-jaw cow at the Union Stock Yards. Owner, John Whitehill.

*The word "measles," found repeatedly in this report, does not refer to trichinosis, which is but rarely found by the inspector. The word "measles" is used to designate dressed carcasses of hogs which have died of cholera, the diagnosis being made on the skin eruption, and without inspection of the intestines. The word "measles," therefore, signifies cholera, the word cholera being used only in cases where the entire carcass has been seen.

On February 10th one bruised cow at the Union Abattoir. Owner, Fred. Manger.

On February 11th one hog with cholera at the Union Abattoir. Owner, Swift & Co.

MARCH.

On March 2d one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On March 3d one hog suffering with cholera. Owner, Swift & Co.

On March 8th one lump-jaw steer at the Union Stock Yards. Louis Buckler, owner.

APRIL.

On March 15th one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On March 16th one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On March 18th two hogs suffering with measles at the Union Abattoir. Owner, Swift & Co.

On March 19th two hogs suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On March 22d one tubercular cow at the Union Stock Yards. Owner, Henry Eckhart.

On March 23d one bruised cow at Union Abattoir. Owner, W. Weitzel.

On March 24th one tubercular cow at the Union Stock Yards. Owner, Adelstein.

On March 29th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, Geo. Weil. Two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, Chas. Leydecker.

On March 30th one calf under age and weight at the Union Stock Yards. Owner, Chas. Brewer.

On April 4th one calf under age and weight at the Union Stock Yards. Owner, Warner.

On April 5th two calves under age and weight at Fulton Station. Owner, Thos. Allman. One hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On April 6th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, Manassey O'Repp. Two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, C. Lawrence. One bruised cow at the Union Abattoir. Owner, Butler.

On April 7th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, Geo. Weil.

On April 11th three calves under age and weight at the Union Stock Yards. Owner, E. A. Blackshire.

MAY.

On April 5th one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Mr. Dehoff.

On April 12th one calf under weight and age at the Union Stock Yards. Owner, Clay Brown.

On April 13th one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Pat. Gannon.

On April 14th one calf under weight and age at Fulton Station. Owner, Oliver Murray. Two calves under weight and age at Fulton Station. Owner, Hanover Produce Co.

On April 15th two calves under weight and age at Fulton Station. Owner, Enoch Frizzell.

On April 16th one calf under weight and age at Baltimore Butchers' Abattoir. Owner, Hanover Produce Co.

On April 19th one calf under weight and age at the Union Abattoir. Owner, Mr. Wolf.

On April 26th two calves under weight and age at the Union Abattoir. Owner, Mr. Fletcher.

On April 29th two calves under weight and age at the Baltimore Butchers' Abattoir. Owner, George Weil.

On April 30th one hog having cholera at the Union Abattoir. Owner, Swift & Co.

On May 3d one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Mr. Wolf.

On May 4th one calf under weight and age at the Union Stock Yards. Owner, Henry Eckhart.

On May 6th one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On May 7th two hogs suffering with measles at the Union Abattoir. Owner, Swift & Co.

On May 10th two calves under weight and age at the Baltimore Butchers' Abattoir. Owner, Mr. Rupersberger.

JUNE.

On May 16th two calves under age and weight, at the Union Abattoir. Owner, J. Smith.

On May 18th one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Mr. Rupersberger.

On May 19th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, Mr. Plitt.

On May 20th three calves under weight and age at Hillen Station. Owner, Mr. Heinsman.

Two calves under age and weight at Highlandtown. Owner, Mr. Smeiser.

On May 23d one calf under age and weight at the Union Stock Yards. Owner, C. Lawrence.

On May 24th one calf under weight and age at the Union Stock Yards. Owner, C. Pepler.

On May 25th one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Chas. Messersmith.

On May 26th one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Pat. Gannon.

On May 30th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, P. Lawrence.

On May 31st one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On June 3d one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, A. Pepler.

JULY.

On June 18th one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On June 19th one lump-jaw steer at the Pennsylvania Railroad depot. Owner, J. Roller. Two calves under weight and age at the Baltimore Butchers' Abattoir. Owner, George Brown.

On June 21st one tuberculous cow at the Pennsylvania Railroad depot. Owner, Louis Bruckley.

On June 23d one calf under weight and age at the Baltimore Butchers' Abattoir. Owner, Mr. Blocker. Two calves under weight and age at Mr. Thomas Kurdel's slaughter house.

On June 24th one hog suffering with measles at the Union Abattoir. Owner, Swift & Co.

On June 29th two hogs suffering with cholera at the Union Abattoir. Owner, Swift & Co. One calf under age and weight at the Baltimore Butchers' Abattoir. Owner, R. Rupersberger.

On July 5th two calves under weight and age at Fulton Station. Owner, George Brown.

On July 6th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, Mr. Rupersberger.

On July 7th two calves under age and weight at Fulton Station. Owner, Oliver Murray. At Union Abattoir one steer having an abscess on side, which diseased the entire carcass. Owner, Mr. Pfeffercorn.

On July 8th one bruised cow at the Union Abattoir. Owner, Brunier & Co. One calf under age and weight at the Union Stock Yards. Owner, Mr. Blackshire.

AUGUST, SEPTEMBER AND OCTOBER.

On July 14th two hogs suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On July 15th two hogs suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On July 17th two lump-jaw steers at the Union Stock Yards. Owner, Greer & Davis.

On July 19th one bruised steer at the Penna. Railroad Station. Owner, Brenner & Co.

On July 21st one tuberculous hog at the Union Stock Yards. Owner, Fred. Goebel.

On July 28th one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On August 2d one tuberculous cow at the Union Abattoir. Owner, Greenwald Bros.

On August 3d one calf under age and weight at Fulton Station, Western Maryland Railroad. Owner, John Brown.

On August 5th two calves under weight and age at Fulton Station. Owner, Louis Bruckley.

On August 7th one lump-jaw steer at the Union Stock Yards. Owner, Henry Eckhardt.

On August 9th one bruised steer at the Union Abattoir. Owner, Greenwald Bros.

On August 12th one hog suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On August 15th two calves under age and weight at the Union Stock Yards. Owner, Alex. Mooney.

August 18th two sheep belonging to Sellmyer & Co.; two calves under age and weight belonging to H. Heineman, and two hogs belonging to Tom Kurdle, one of which had measles and the other cholera.

On August 19th one lump-jaw steer at the Union Stock Yards. Owner, Meyers & Hausman.

On August 22d 2 calves under age and weight at Highlandtown. Owner, Tom Kurdle.

On August 24th two calves under weight and age at the Baltimore Butchers' Abattoir. Owner, F. Smith.

On August 29th one bruised steer at the Union Abattoir. Owner, Chas. Leydecker; one sheep having gid at the Union Stock Yards. Owner, Fritz Engelman.

On September 1st two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, Ruperbersger & Son.

On September 4th one steer having pneumonia at the Union Stock Yards. Owner, Brenner & Co.

On September 5th two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, J. Smith.

On September 9th one lump-jaw steer at the Union Stock Yards. Owner, Cornelius Driver.

On September 14th one bruised steer at the Union Stock Yards. Owner, Wm. Davis.

On September 16th five hogs having cholera at the Union Abattoir. Owner, Swift & Co.

On September 19th one lump-jaw steer at the Union Stock Yards. Owner, Mr. Butler.

On September 20th one bruised steer at the Union Stock Yards. Owner, F. Clarke.

On September 22d two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, Mr. Brown.

On September 23d one bruised steer at the Union Stock Yards. Owner, Gebhardt Bros.

On September 25th one lump-jaw steer at the Union Stock Yards. Owner, D. Fox.

On September 26th two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, Chas. Brewer.

On September 29th one hog having measles at the Union Abattoir. Owner, Swift & Co.

On September 30th two hogs having cholera at Union Abattoir. Owner, Swift & Co.

October 3d one bruised cow at the Union Stock Yards. Owner, Henry Eckhardt.

October 10th one hog having cholera at the Union Abattoir. Owner, Swift & Co.

NOVEMBER.

On October 13th two calves under age and weight at the Union Stock Yards. Owner, Wm. Wolf.

On October 14th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, C. Messersmith.

On October 17th two calves under age and weight at the Baltimore Butchers' Abattoir. Owner, C. Pepler.

On October 19th one bruised cow at the Union Abattoir. Owner, Wm. Engle.

On October 21st one bruised sheep at the Union Stock Yards. Owner, Meyers & Hausman.

On October 22d three hogs suffering with cholera at the Union Abattoir. Owner, Swift & Co.

On October 25th two calves under weight and age at the Baltimore Butchers' Abattoir. Owner, Chas. Wolf.

On October 26th one tuberculous steer at the Union Stock Yards. Owner, F. Manger.

On October 28th one calf under age and weight at the Baltimore Butchers' Abattoir. Owner, Rupersberger.

On November 3d one bruised steer at Highlandtown.

On November 5th two hogs suffering with "measles" at the Union Abattoir. Owner, Swift & Co.

On November 6th one lump-jaw steer at the Union Stock Yards. Owner, Frank Jamison.

On November 7th one bruised steer at the Union Stock Yards. Owner, P. H. Smith.

DECEMBER.

On November 10th two hogs suffering with cholera at Union Stock Yards. Owner, Swift & Co.

On November 13th one steer, bruised, at Union Stock Yards. Owner, Samuel Sundheimer.

On November 15th one calf, bruised, at Baltimore Butchers' Abattoir. Owner, W. Wiel.

On November 17th one steer suffering with lump-jaw at Union Stock Yards. Owner, Geo. Schneider.

On November 21st one calf under age and weight at Baltimore Butchers' Abattoir. Owner, Chas. Messersmith.

On November 22d one calf under age and weight at Baltimore Butchers' Abattoir. Owner, W. Wolf.

On November 23d one steer, bruised, at Union Stock Yards. Owner, H. Steiner.

On November 25th two hogs suffering with cholera at Union Abattoir. Owner, Swift & Co.

On November 26th two calves under age and weight at Baltimore Butchers' Abattoir. Owner, Mr. Weitzel.

On December 5th one cow, bruised, at Union Abattoir. Owner, Gephart Bros.

Also the following meat:

On April 23d witnessed the slaughter of 32 cattle under the supervision of State Veterinarian. Sixteen animals were condemned and tanked. The herd belonged to Col. L. Victor Baughman, of Frederick county, and were affected with tuberculosis.

May 14th 30 spoilt hog livers at the Union Abattoir. Owner, Swift & Co.

July 1st 90 spoilt hog plucks at the Union Abattoir. Owner, Swift & Co.

July 26th seven tuberculous cows out of a herd of 17 at the Home for Feeble-Minded Children, Owings Mills.

August 18th 2,350 pounds of beef at the store of R. M. Jones & Co., Pennsylvania and Fulton Aves.

October 5th eight spoilt sheep at the Union Abattoir.
Owner, Charles Leydecker.

SUMMARY.

Condemned and Tanked during 1904.

Diseases.	Hogs.	Cattle.	Sheep.
Cholera.....	53		
Gid.....			1
Bruised.....		21	2
Gangrene.....	1		
Tuberculosis.....	1	5	
Pleuro-pneumonia.....		1	
Actinomycosis.....		15	
Under weight and age.....		91	
Pyæmia.....		1	
Not specified.....			2
	55	134	5

Places.	Hogs.	Cattle.	Sheep.
Union Abattoir.....	47	18	
Union Stock Yards.....	5	42	3
Baltimore Butchers' Abattoir.....		45	
Fulton Station.....		14	
Hillen Station.....		3	
Highlandtown.....	2	7	2
Penna. Railroad Depot.....		3	
Thos. Kurdel's Slaughter House.....		2	
Place not stated.....	1		
Total.....	55	134	5

CONDEMNED AND TANKED DURING 1904.

Owners.

Swift & Co., 49 hogs. Henry Eckhart, six cattle, one sheep. Stern, Bernheimer Bros., one hog. Chas. Thompson, one steer. Lee one cow. Alex. Mooney, three cattle. Myers and Housman, two cattle, one sheep. Moses Atkinson, one steer. John Whitehill, one cow. Fred. Manger, two cattle. Louis Buckler, one steer. Hanover Produce Co., three cattle. Enoch Frizzell, two cattle. Wolf, seven cattle. Fletcher, two cattle. Rupers-

burger, eight cattle. J. Smith, four cattle. Plitt, one cow. Heintzman, three cattle. Smeiser, two cattle. C. Lawrence, two cattle. C. Peppler, four cattle. Chas. Messersmith, three cattle. J. Roller, one steer. Geo. Brown, four cattle. Louis Bruckley, three cattle. Blocker, one cow. Thos. Kurdle, two hogs, four cattle. Pfeffercorn, one steer. Brunier & Co., three cattle. E. A. Blackshire, four cattle. Greer and Davis, two cattle. Fred. Goebel, one hog. Greenwald Bros., two cattle. John Brown, one cattle. Sellmeyer & Co., two sheep. H. Heineman, two cattle. F. Smith, two cattle. W. Weitzel, three cattle. Adelstein, one steer. Geo. Weil, five cattle. Chas. Leydecker, three cattle. Warner, one cow. Chas. Brewer, three cattle. Thos. Allman, two cattle. Dehoff, one steer. Clay Brown, three cattle. Pat. Gammon, two cattle. Oliver Murray, three cattle. Geo. Schneider, one cow. H. Steiner, one steer. Fritz Engleman, one sheep. Cornelius Driver, one cow. Wm. Davis, one steer. Butler, two cattle. F. Clarke, one steer. Gephardt Bros., two cattle. D. Fox, one cow. Wm. Engleman, one steer. Frank Jamison, one cow. P. H. Smith, one steer. Sam. Sondheimer, one steer. Manassey O'Repp, one steer. C. Lawrence, two cattle. Owner not stated, two hogs, one cow.

Total, 55 hogs, 134 cattle, five sheep.

PARTIAL CONDEMNATIONS DURING 1904.

Causes and Parts.	Place.	Owner.
30 spoilt beef livers....	Union Abattoir	Swift & Co.
90 spoilt beef plucks...	Union Abattoir	Swift & Co.
25 spoilt beef heads ...	Union Abattoir	Greenwald Bros.
2,350 pounds spoilt beef..	R. M. Jones' Store..... (Pa. and Fulton aves.)	R. M. Jones & Co.
8 sheep spoilt.....	Union Abattoir	Chas. Leydecker.

Respectfully submitted,

CHARLES N. MITTEN, Inspector.

CLERICAL REPORT.

(1904)

Number of letters (regular correspondence)	1,949
Number of mimeographed letters	694
Number of typewritten sheets, exclusive of correspondence	339
Number of second-class packages	6,952
Number of birth certificates filed	8,298
Number of death certificates filed	7,944

Sent vouchers to fifty-three local registrars for the registration of births and deaths for the quarters ending December 31, 1903; March 31, 1904; June 30, 1904; September 30, 1904.

Respectfully submitted,

M. L. RULLMAN, *Clerk.*

CHEMIST'S REPORT.

DR. JOHN S. FULTON,

Secretary State Board of Health,

Baltimore, Md.

Dear Sir : In making out an annual statement of work done by this Laboratory for the year 1904, I beg to state that my report must date from February 9, 1904, to December 31, 1904, as all my records prior to February 7, were destroyed by fire.

During the period from February 7 to December 31, 1904, I made the following analyses, distributed as below by counties :

Anne Arundel,	11	samples of water.	Howard,	4	samples of water.
Allegany,	19	" "	Kent,	2	" "
Baltimore,	13	" "	Montgomery,	8	" "
Carroll,	2	" "	Princess Anne,	3	" "
Caroline,	2	" "	Somerset,	1	" "
Cecil,	8	" "	Washington,	6	" "
Frederick,	5	" "	Worcester,	1	" "
Garrett,	2	" "	Talbot,	3	" "
Harford,	3	" "			

This is a total of 93 samples.

Yours respectfully,

W. B. D. PENNIMAN,

Chemist.

INDEX.

INDEX OF CHARTS AND TABLES.

	Page
Chart 1. Births by months—male, female and total.....	12
Chart 2. Deaths by ages—Maryland—1904.....	15
Chart 3 (a.) Deaths by ages—Baltimore city—1904.....	16
Chart 3 (b.) Deaths by ages—Rural Maryland—1904.....	17
Chart 4. Distribution by population and deaths by ages—Maryland—1904.....	20
Chart 5. Maryland classification of causes of death.....	24
Chart 6. Nineteen principal causes of death.....	26
Chart 7. Nineteen principal causes of death.....	27
Chart 8. Principal causes of death classified according to their importance in middle period of life.....	28
Chart 9. Age distribution of general mortality—Maryland—1904...	32
Chart 10. Age distribution of malignant neoplasms, diphtheria and cerebral hemorrhage.....	33
Chart 11. Age distribution of Bright's disease, paralysis and accidental violence	34
Chart 12. Age distribution of pneumonia, broncho-pneumonia and organic heart disease.....	35
Chart 13. Age distribution of typhoid fever, whooping-cough, tuberculosis (pulmonary).....	36
Chart 14. Deaths by months—all causes—Baltimore and Rural districts	38
Chart 15. Monthly mortality of eight principal diseases—Maryland—1904.....	40
Chart 16. Comparative susceptibility of the several organs to parasitic infections.....	43
Chart 17. Expectation and duration of life—Rural Maryland—1904.	48
Chart 18. Maryland biometer—1904.....	51
Chart 19. Typhoid morbidity of ages—Rural Maryland—for five years, beginning 1898.....	134
Chart 20. Combined seasonable incidence of typhoid fever and paracolonic infections for five years, beginning 1898.....	136
Table I. Estimated population—births, deaths and increase of population and rates.....	5, 6, 7
Table II. Estimated population of Maryland (1904)	8
Table III. Births in Maryland—summary.....	10
Table IV. Births—male and female—by months—Rural districts...	11
Table V. Still-births by months—Rural districts.....	11

Table VI.	Deaths and percentages of total mortality by ages— Rural districts, Baltimore city and Maryland.....	14
Table VII.	Population of death per 1,000 at the several age-periods— Maryland	19
Table VIII.	Classification of causes of death according to sanitary relations, with ratios to total mortality.....	22, 23
Table IX.	Nineteen principal causes of death—Maryland (1904) mor- tality rates and ratios.....	24
Table X.	Age distribution of principal diseases.....	29, 30
Table XI.	Deaths from infections showing the organ infected.....	41, 42
Table XII.	Expectation of life in Maryland, 1904.....	47, 48
Table XIII.	Survivorship in Maryland, 1904	50
Table of births and deaths in Anne Arundel county.....		53, 54
Table of deaths in Cecil county.....		62, 63
Table of births, deaths, and infectious disease in Kent county.....		70, 71
Table of births, deaths, and infectious disease in Washington county.....		74, 75
List of county health officers.....		78
Table of deaths by months and causes—Annapolis.....		79
Table of births by months, color and sex—Annapolis.....		80
Table of births and deaths in Brunswick by months and causes.....		81
Table of infectious diseases—Brunswick.....		82
List of town health officers.....		86
Table of water analyses—chemical—Annapolis water-supply.....		93, 94
Table of water samples—bacteriological—Annapolis water-supply...		94
Table of water analyses—bacteriological—Frostburg water-supply...		119
Table of water analyses—bacteriological—Annapolis and Eastport...		122
Table showing ages of laboratory typhoids.....		133
Table showing seasonal distribution of typhoid and pseudo-typhoids.		135
Table showing positive and negative laboratory reactions for typhoid by counties.....		137
Table of symptomatology of typhoid—positive.....		137
Table of symptomatology of typhoid—negative.....		138
Table showing symptoms in order of importance—positive and nega- tive reactions.....		138
Table of symptoms groups typhoid fever.....		139, 140
Table showing a number of symptoms in typhoid fever.....		140
Table showing symptomatology according to age in typhoid fever.....		140, 141, 142
Table showing percentages of afebrile cases of typhoid.....		143
Table showing the percentage of melaena in typhoid by ages.....		143
Table of symptomatology of typhoid by ages.....		144
Table II.	Bacteriological water examinations made in the State laboratory in 1904, giving date, source, colonies, per c.c., presence of absence of colon bacillus, and quality. 148, 149, 150, 151, 152, 153	
Table II (a).	Bacteriological milk examinations made in the State laboratory in 1904, giving date, source, colonies, per c.c., presence or absence of colon bacillus, and quality.....	154

Table showing causes of condemnation for hogs, cattle, and sheep condemned by inspector during 1904.....	163
Table showing places of condemnation and number of hogs, cattle, and sheep condemned at each place.....	163
Table of partial condemnations during 1904, showing places, owners, and parts condemned.....	164

MAPS AND DIAGRAMS.

Annapolis water-supply—impounding and pumping system—sketch map.....	95
Annapolis reservoir system diagram.....	96
Frostburg water-supply—	
Sketch map.....	115
South slope system diagram.....	116
Reservoir showing artesian well and sub-soil water.....	117
North bank of Jennings's run, showing course of drainage-profile diagram.....	107
Water-supply of Mt. Savage, showing location of typhoid cases.....	108
West Arlington and vicinity—	
Showing drainage map.....	128
Wiley avenue and Pimlico road, showing drainage from Halsted's Roadhouse—detail map.....	129

ALPHABETICAL INDEX.

Actinomycosis in animals.....	163
Age periods, population, mortality, at the several, 18; Table VII, 19; Chart 4.....	20
Allegany county, typhoid fever in.....	52
Animals—	
Diseased, condemned by inspector.....	155-164
Diseased, owners of, condemned.....	163-164
Diseased, condemned for cholera, gid, bruised, gangrene, tuberculosis, pleuro-pneumonia, actinomycosis, pyaemia, under weight and age.....	155-163
Diseased, places where condemned.....	155-163
Annapolis, sanitary inspection of water supply.....	89-96
Anne Arundel county, births and deaths in, table.....	53, 54
Bacteriologist, report of.....	147-154
Baidwin, Dr. Joseph S., report of.....	56, 57
Baltimore city, rate of increase, 1890-1900.....	2
Total births registered in.....	2
Total deaths registered in.....	1
Biometer, Maryland.....	47, 49, 50, 51

Birth certificates, value of, to citizens of Maryland.....	x
Births—	
By months, male and female, Chart 1.....	12
Male and female, by months.....	10, 11
Rural districts, Table IV.....	11
Percentage of total returned in Maryland.....	1
Total registered 1904, Maryland.....	2, 4
Rural districts.....	2, 4
Baltimore city.....	2, 4
White in Maryland.....	4
Colored in Maryland.....	4
Male in Maryland.....	4
Female in Maryland.....	4
Board of Health—	
Allegany county.....	52, 53
Anne Arundel county.....	53, 54
Baltimore county.....	54-60
1st district.....	54, 55
3d “	55
4th “	56
6th “	55, 57
9th “	57, 58
10th “	58, 59
11th “	59
15th “	59-60
Calvert county.....	60
Carroll county.....	61
Cecil county.....	62, 63
Charles county.....	63, 64
Dorchester county.....	64, 65
Frederick county.....	65, 66, 67
Garrett county.....	67
Harford county.....	68
Howard county.....	68, 69
Kent county.....	69, 70, 71
Montgomery county.....	71, 72
Prince George's county.....	72, 73
Queen Anne's county.....	73, 74
Washington county.....	74, 75, 76
Wicomico county.....	76
Worcester county.....	77
Annapolis.....	79, 80
Brunswick.....	81, 82, 83
Cumberland.....	52, 53
Frederick City.....	83

Board of Health—	
Lonaconing	84
Olney	84, 85
Boards of Health, county and town.....	52-86
Local, efficiency of.....	x
Brace, Dr. Charles H., report of.....	52, 53
Bullock, Dr. J. O., report of.....	84
Calves under weight and age, condemned.....	155-163
Charles county, small-pox in.....	64
Chemist, report of.....	166
Cholera in hogs.....	155-163
Colon bacillus, water samples containing.....	149-153
Condemned by inspector, diseases of animals, summary.....	163, 164
Cooper, Dr. John W., Jr., report of.....	62, 63
Coppage, Dr. W. G., report of.....	73, 74
County and town boards of health.....	52-86
Death, principal causes, mortality rates and ratios—	
Of Nineteen	23, 24
Table IX	24
Chart 5.....	25
Chart 6.....	26
Chart 7.....	27
Deaths—In Maryland.....	12
Rural districts.....	12
Baltimore city.....	12
White	12
Colored	12
Male	12
Female.....	12
By ages—Table VI.....	16
Maryland, Chart 2.....	15
Baltimore city, Chart 3 (a).....	16
Rural districts, Chart 3 (b).....	17
Total, registered 1904, Maryland.....	1
Rural districts.....	1
Baltimore city.....	1
Death rates by sex, Maryland, rural districts, and Baltimore city...	13
Deyhough, sale of diseased meat by.....	130-232
Dorchester county, small-pox in.....	65
Diseased animals condemned by inspector.....	155-164
Diseased meat case of State Board of Health vs. Deyhough, in the matter of the sale of.....	130-132
Duration of life.....	46, 47, 48, 49, 50, 51

Eastport, sanitary inspection of water supply.....	120-123
Sanitary report on typhoid epidemic in.....	120-123
Sewage and drainage in.....	120
Emory, Dr. Thos. H., report of.....	58, 59
Estimated population, method of determining.....	2, 3
Expectation of life.....	47, 48
Farquhar, Dr. Charles, report of.....	84, 85
Food, bacteriological examination of.....	147
Foutz, Dr. Chas. R., report of.....	61
Frederick county, small-pox in.....	66, 67
Frostburg reservoir system, etc.....	112, 113, 115, 116, 117, 119
Frostburg, sanitary inspection of water supply.....	109-119
Gangrene in animals.....	163
Garrett county, small-pox in.....	67
Gorsuch, Dr. Jas. F. H., report of.....	59
Gid in sheep.....	163
Halsted's road-house, nuisance produced by sewage and drainage of.....	123-129
Harford county, small-pox in.....	68
Harrison, Dr. John W., report of.....	59, 60
Havre de Grace, sanitary inspection of water supplies.....	87-89
Henkel, Dr. Louis B. Jr., report of.....	79, 80
Horine, Dr. A. G., report of.....	81, 82, 83
Infections—	
Parasitic of the lungs.....	41
Of the respiratory tract.....	41
Of the alimentary tract.....	41
Of the urinary tract.....	41
Of the nervous system.....	41
Of the skin.....	42
Of the liver.....	42
Of the bones.....	42
Of the blood.....	42
General.....	41
Arthritic.....	42
Inspector, report of.....	155-164
Jones, Dr. C. P., report of.....	77
King, Dr. I. N., report of.....	60
Laboratory, Bacteriological examination of—	
Blood for typhoid fever.....	147
Blood for malaria.....	147

Laboratory, Bacteriological examination of—

Sputum for tuberculosis.....	147
Examination of food.....	147
Animals for rabies.....	147
Water samples.....	148-153
Milk samples.....	154
Report of.....	147-154
Chemical, report of.....	166
Bacteriological, summary of examination (1904).....	xi
Lewis, Dr. Wm. L., report of.....	71, 72
Letter of Transmittal.....	vii
Life, duration of.....	46, 47, 48, 49, 50, 51
Tables in Maryland.....	47, 48, 50

Malaria, bacteriological examination of blood for..... 147

Maryland—

Births in, summary, Table III.....	10
Biometer.....	47, 49, 50, 51
Classification of mortality.....	21, 22, 23
Chart 5.....	25
Estimated population of.....	8
Increase of population.....	9
Paratyphoid and paracolon fevers in.....	136, 137, 138, 145
Percentage of total berths returned in.....	1
Percentage of total mortality returned in.....	1
Rate of increase, 1890-1900.....	2
Total births in, white.....	4
colored.....	4
male.....	4
female.....	4
Total births registered in.....	2
Total deaths registered in.....	1
Massenburg, Dr. R. C., report of.....	57, 58
Mattfeldt, Dr. C. L., report of.....	54, 55
Meat condemned by inspector.....	162
Milk, bacteriological examination of.....	154
Miller, Dr. T. E. R., report of.....	65, 66, 67
Mitten, Mr. Charles N., report of.....	155-164
Monroe, Dr. G. O., report of.....	63, 64
Morbidity—	
Typhoid fever, by ages.....	133, 134
Typhoid fever, by sex.....	133
Mortality—	
Maryland classification of—Chart 5.....	21, 22, 23
Percentage of total, returned in Maryland.....	1
Ratios, by ages—Table VI.....	14

Mortality—

Population and deaths at several age periods.....	18
Table VII	19
Chart 4.....	20
Seasonal incidence of.....	37, 38, 39, 40
Special causes of.....	44, 45, 46
Small-pox	44
Rabies	44
Alcoholism	44
Insanity and epilepsy	44
Tetanus.....	44, 45
Hydatid tumors of liver.....	45
Parasites, intestinal.....	45
Pregnancy	45
Suicide.....	45
Violence, accidental.....	45, 46
Lightning	46

Mount Savage—

Sanitary inspection of water supply.....	97-108
Sanitary regulations in.	104, 105
Sanitary report on typhoid epidemic of.....	97-108
Water supply of.....	101, 102
Sewage and drainage in.....	102

Naylor, Dr. Henry A., report of.....	55
Nuisance produced by sewage and drainage of, Halsted's road-house.....	123-129

Organs, comparative susceptibility of, to infections.....	41, 42, 43
Olney, tuberculosis in.....	85
Owings, Dr. Thos. B., report of.....	68, 69

Penniman, Dr. W. B. D., report of.....	166
Pleuro-pneumonia in animals.....	163

Population—

And mortality at the several age periods.....	18
Table VII.....	19
Chart 4.....	20
Estimated, of Maryland.....	8
Increase of, in Maryland.....	9
Method of estimating.....	2, 3
Rate of increase, 1890-1900—Maryland.....	2
Rural districts.....	2
Baltimore city.....	2

Principal causes of death.....	23-37
Mortality rates and ratios of the nineteen—Table IX, (Chart 5). 23, 24	
Md. classification of.....	25
Chart VI.....	26
Chart VII.....	27
According to middle period of life, Chart 8.....	28
Age distribution of, by 3 age periods—Table X.....	29, 30
Age, distribution of.....	30, 31
Chart 9.....	32
Chart 10.....	33
Chart 11.....	34
Chart 12.....	35
Chart 13.....	36
Price, Dr. Marshall Langton, reports of.....	86-145
Pyæmia in animals.....	163
Queen Anne's County, report of....	73, 74
Rabies, bacteriological examination of animals for.....	147
Ravenscroft, Dr. W. H., report of.....	67
Registration States, United States requirement for.....	1
Reservoir, of Annapolis.....	90, 93, 94, 96
Rural districts—rate of increase 1890-1900.....	2
Total births registered in.....	2
Total deaths registered in.....	1
Sanitary inspections, reports of.....	87-127
Sansbury, Dr. John E., report of.....	72, 73
Scheller, Dr. C. R., report of.....	74, 75, 76
Seasons, mortality by.....	37, 38, 39, 40
Sewage and drainage—	
Eastport.....	120
Mount Savage.....	102
West Arlington.....	123-129
Sex, death rates by, Maryland, rural districts, and Baltimore city....	13
Simpers, Dr. H. G., report of.....	69, 70, 71
Slade, Dr. H. M., report of.....	56
Small-pox, incidence of, in Maryland.....	vii
Smithson, Dr. F. P., report of.....	68
State Board of Health, work of the Executive Office (1904).....	xi
Statistical analysis of typhoid fever.....	130-145
Steele, Dr. Guy, report of.....	64, 65
Still-births by months, Table V.....	11
Stokes, Dr. Wm. R., report of.....	147-154
Survivorship in Maryland.....	47, 49, 50, 51
Table of, in Maryland.....	50

Thomas, Dr. S. F., report of.....	83
Tuberculosis in animals.....	163
Bacteriological examination of sputum for.....	147
Incidence of, in Maryland.....	vii
Disinfections on account of.....	viii
House regulation of.....	viii
And regulation of.....	viii
Truitt, Dr. Charles R., report of.....	76
Typhoid Fever—	
Bacteriological examination of blood for.....	147
Febrile cases of.....	143
Morbidity by age.....	133, 134
Morbidity by counties.....	137
Morbidity by sex.....	133
Paratyphoid and paracolon fevers in Maryland.....	136, 137, 138, 145
Positive and negative reactions in.....	133
Seasonal distribution of morbidity of.....	135, 136
Statistical analysis of.....	130, 145
Symptoms of, by age groups.....	144
Symptomatology of.....	137, 138
Symptoms, groups in.....	139, 140
Symptomatology of, according to age.....	140, 141, 142, 143
Incidence of, in Maryland.....	
Vital statistics, 1904.....	1
Vital statistics, main elements of.....	1
Deficiency in the returns of.....	ix
Procedure recommended to improve.....	ix
Walton, Dr. H. R., report of.....	53, 54
Washington county, milk supply of.....	76
Water samples, colonies per c.c.....	158-163
Water, samples containing colon bacillus.....	149, 150, 151, 152, 153
Water supply, sanitary inspection of—	
Annapolis.....	89, 90, 91, 92, 93, 94, 95, 96
Eastport.....	120-123
Frostburg.....	109-119
Havre de Grace.....	87, 88, 89
Mount Savage.....	97-108
Welch, Dr. Wm. H., Letter of Transmittal.....	vii
West Arlington, sewage and drainage in.....	123-129
Widal reactions in State Laboratory, 1899-1904.....	132, 133

